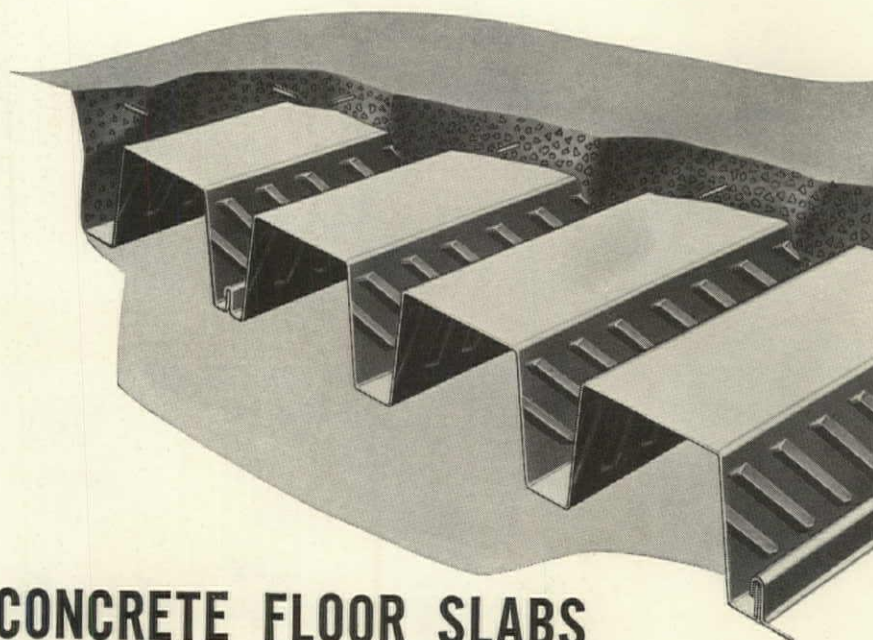


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 BLACK SOX
 BLACK HAWK
 PALMER HOUSE
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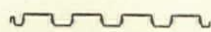
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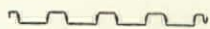
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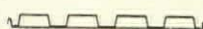
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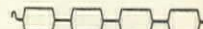
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Type BR Hi-Bond Floor Deck
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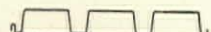
Type BF Cellufloor
24" wide, 1½" deep.



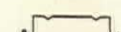
Type BB Cellufloor®
24" wide, 3" deep.



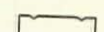
Type N Hi-Bond Floor Deck
24" wide, 3" deep.



Type NF Cellufloor
24" wide, 3" deep.



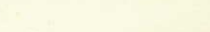
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PUBLISHER'S NOTE

Working in New York City, FORUM's editors have become accustomed to the daily changes in Manhattan's skyline and street-scape. By comparison, most cities have for years seemed asleep.

But recently Chicago has been stirring. FORUM's editors noted the yawning and stretching some time ago and began their plans for this special issue devoted to Chicago's renaissance as a vital force in architecture, planning, and building technology.

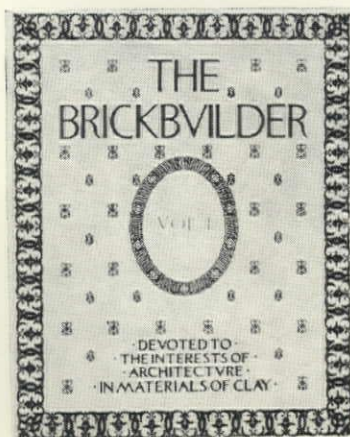
Since then a task force of seven, headed by Senior Editor David Carlson, has spent some 60 man-days in Chicago developing material for a rounded report. Last month, as the deadline approached, Carlson and Researcher Anne LeCrenier lived an intensive two weeks in Chicago, walking and riding the streets and interviewing 61 citizens who have been awakening the city: 13 architects, engineers, and builders, ten captains of industry and commerce, nine planners, six realtors, five city officials, four community organization directors, four historians, two educators, and eight others, including members of the press, a sociologist, and Mrs. Julius E. Weil, the elderly daughter of one of Chicago's most fa-

mous architects, Dankmar Adler.

FORUM's Chicago detachment also culled hundreds of existing photographs and drawings and commissioned a trio of photographers and a gifted artist, Architect Albert Goers of Pace Associates, to bring fresh insights to particular aspects of the city today. One necessary photo was an aerial shot of the water front made from the same angle as an old engraving of early Chicago (see foldout, page 85).

Meanwhile, back in New York, other editors, writers, and researchers were working with the art department, weaving words and pictures about the many different phases of the new Chicago into a cohesive story. Meanwhile, too, the production and circulation departments were preparing for the biggest press run—71,500 copies—and the biggest distribution problem in FORUM's long history. (The Chicago Commerce & Industry Association had ordered 1,150 extra copies of this issue, and 4,000 more have been put on Chicago newsstands.)

So busy was the staff preparing what promises to become a milestone in architectural journalism that it found no time to celebrate the passing of two other milestones. Seventy years ago—just as Adler & Sullivan started on the design of the famous Chicago Stock Exchange, which still stands at 30 North La Salle—a small group of men were putting together the initial issue of FORUM, then called *The Brickbuilder*. Volume I Number I was dated January 1892. The other milestone: 30 years ago this month FORUM was acquired by Time Inc. On second thought, this special issue on Chicago is in a sense a celebration—J.C.H. Jr.



SPECIAL ISSUE: CHICAGO

Mud, people, and poetic license—what made a city great 83

CHICAGO'S EVOLVING ARCHITECTURE

New clarity and beauty: Mies and the Second Chicago School 89

Modern classics of the First Chicago School 94

A third period of architecture in the making 97

Architect Harry Weese: young designer of the old school 102

CHICAGO'S URBAN DEVELOPMENT

How Burnham's magnificent plan helped shape today's city 107

The rage to reconstruct central Chicago 114

Slums: the city's number one urban renewal target 119

Woodlawn: a case study in renewal practices and problems 122

CHICAGO'S CREATIVE TECHNOLOGY

"Chicago Construction" and the "Chicago Window" 125

Some of the newer experiments in concrete 132

Myron Goldsmith: Chicago's new poet of structure 134

Islands in the lake: technically feasible, still a dream 140

NEEDED: A NEW BURNHAM PLAN

142

100 BIGGEST ARCHITECTS

FORUM's latest survey shows how much, and what, they do 14

PROJECTS: NEW DOWNTOWN FOR DALLAS

Fort Worth's neighbor proposes a radical, realizable scheme 42

5 NEWS Cover: Chicago, by Ray Komai.

18 LETTERS 20 Editorial, subscription, and advertising data.

42 PROJECTS 210 Advertising index.

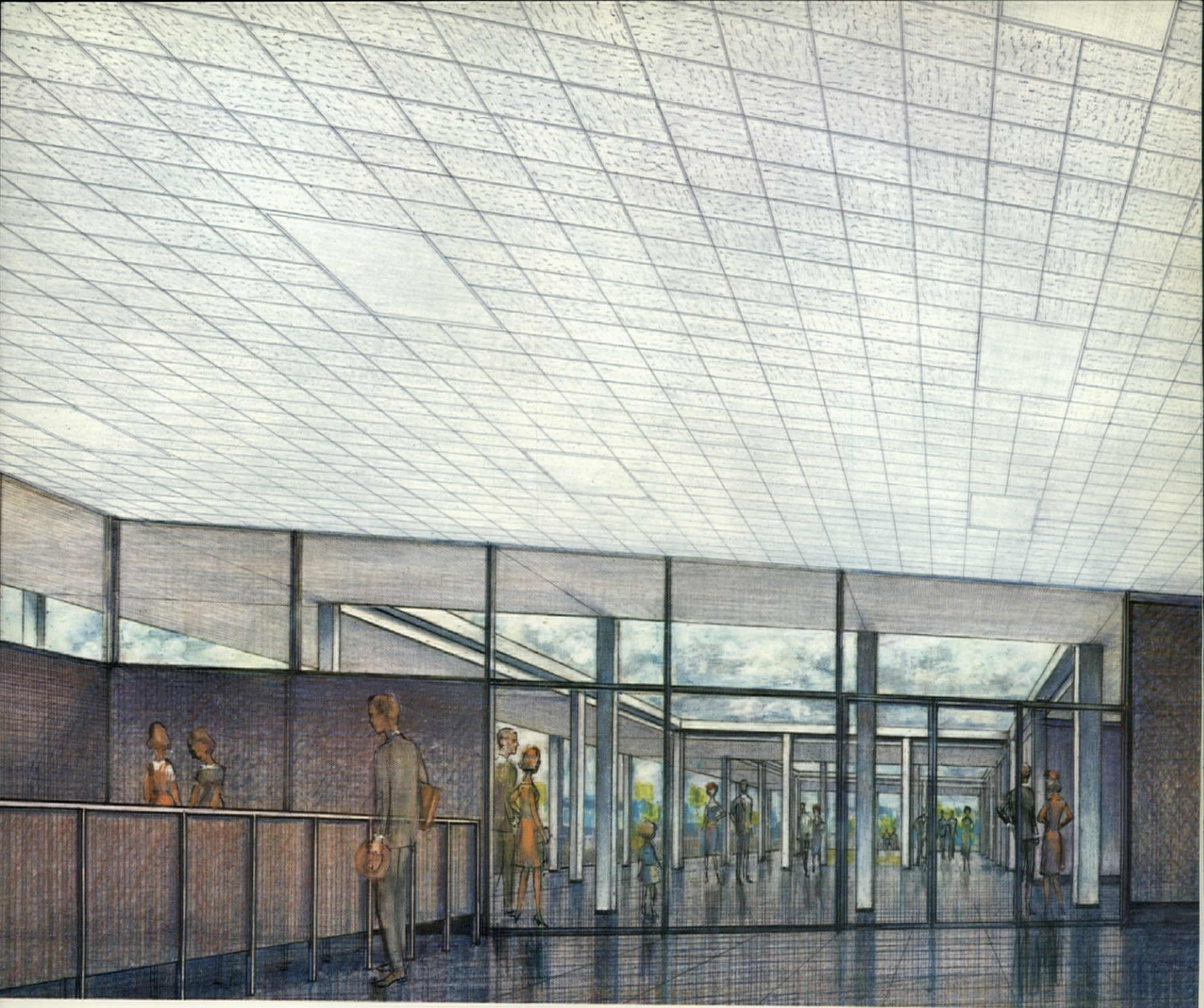
47 PRODUCTS

142 EDITORIAL

185 BOOKS

214 EDITOR'S NOTE

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RENDERING BY ARA DERDERIAN

Court decision favors city dwellers (below)
First quarter construction slightly up (page 7)
Aesthetics: whose responsibility? (page 9)
Housing project under fire (page 11)

SUPREME COURT BACKS REAPPORTIONMENT

Back in late February, one of the strongest objections to the creation of a Department of Urban Affairs was that it would claim rights possessed by the states. Proponents of the new Department countered that most state legislatures were rurally dominated, and paid little attention to urban affairs.

On March 26, the Supreme Court, in effect, threw the problem of urban affairs back into the laps in which it belonged all along—those of the state legislatures. It did this by initiating a process that will, eventually, give big-city states big-city legislatures, which can be expected to pay more attention to big-city problems.

The case for reapportionment in Tennessee

It all began 10 years ago, with 11 city dwellers in Tennessee, who found that they had a disproportionate voice in their state government, and therefore (indirectly) in the House of Representatives: as little as 37 per cent of the population could elect a majority of 60 per cent in the state's upper house, and 40 per cent could elect 64 per cent in the lower house. (Tennessee had not reapportioned assembly seats since 1901, despite a stipulation in the state constitution to redistrict every 10 years.)

With political channels closed to them, the Tennesseans turned to the courts. And after failing to make headway in lower courts, they appealed to the Supreme

Court which finally decided, last month, by a vote of 6 to 2, that the Tennesseans had a legitimate case which could be heard in lower federal courts. That was all, but the implications went far.

A legal landmark

For the first time the Court had stepped into the "political thicket," but it had done so tentatively. Unanswered was the question of the point at which malapportionment becomes intolerable. Indeed, Justice Harlan (dissenting) felt that Tennessee voters were receiving constitutionally fair treatment as it was. Moreover, no standards were set for judging the validity of the various ways in which states elect their legislators: Vermont uses towns, for example, California uses counties, and Hawaii, islands. Nor did the Court decide that equal protection for each citizen (under the Fourteenth Amendment) meant mathematical equality of votes.

What the future holds, obviously, is a series of protracted lawsuits to define what are "fair" legislative districts. In the meantime, President Kennedy has urged the states to reform their districts without waiting for litigation.

Political realists doubt many states will follow the President's plea. Widespread "token" reap-

portionment is more likely. State legislators retain the power to redraw district lines, and they will hardly be eager to vote themselves out of jobs. Then there is the problem of how to enforce the Court decision. More is needed to convince a state assembly to act than a Court order—as the 1954 desegregation case showed.

Another important aspect of the reapportionment case is its effect upon relative party strength. Numerically fairer apportionment might give more voting power to the predominantly Democratic urban residents. It would also, however, give the potentially Republican suburban voter a greater voice in the state legislatures. And in the South, reapportionment would definitely favor the Republicans. It is interesting to note that the Attorneys General in both the Eisenhower and the Kennedy administrations supported the 11 Tennesseans in the years preceding the actual decision. So overall party composition may not be altered—just shifted

around. In any case, voters in urban areas will, in the long run, have more say in their state governments.

Some economic doubts

Municipal problems of housing, transportation, and urban renewal should certainly receive the attention they merit and demand. What remains to be seen is whether the urbanized states can raise the money needed to solve these problems—regardless of who controls the legislatures. Local authorities are well aware that they cannot raise sufficient funds by themselves to pay for necessary capital facilities and improvements, and so they will continue to ask for aid from above. If the states supply that aid, then state taxes will go up. Senator Joseph S. Clark (Dem., Pa.) points out that higher state taxes may succeed in driving business and industry out of the state. The inevitable conclusion: cities will continue to ask for federal assistance rather than state aid—even after reapportionment.

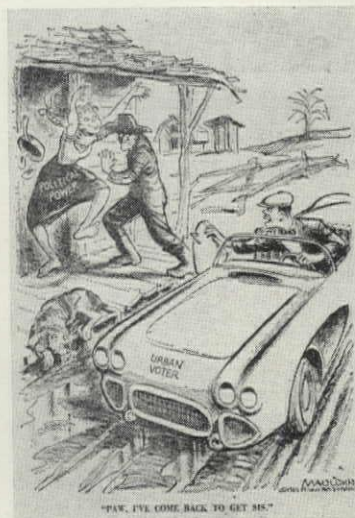
KENNEDY OFFERS TRANSPORTATION POLICY

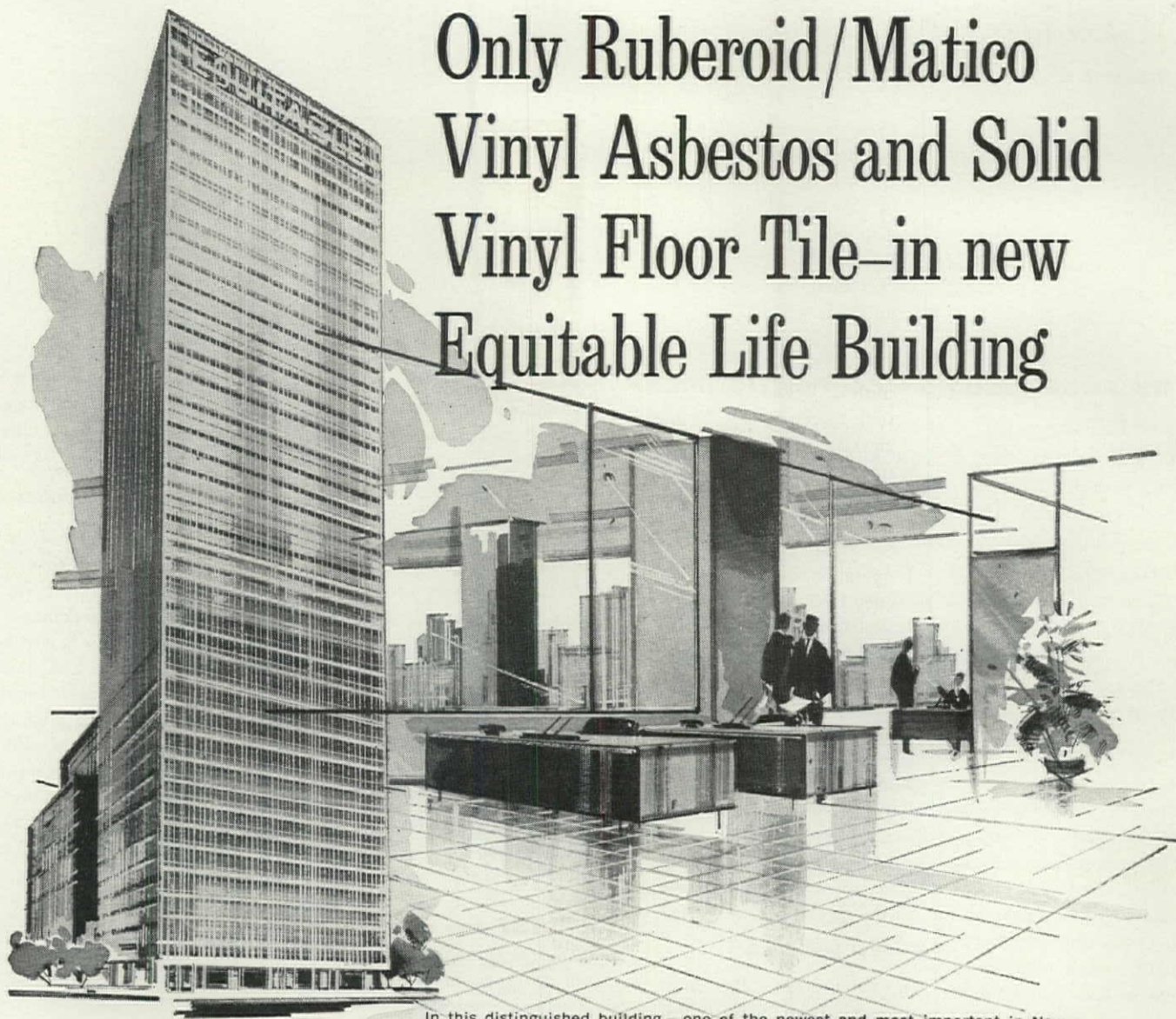
"An efficient and dynamic transportation system is vital to our domestic economic growth, productivity and progress," President Kennedy said in an April 5 message to Congress. At present, however, "a chaotic patchwork of

inconsistent and often obsolete legislation and regulation" controls the nation's transportation facilities, and has indirectly led to large financial losses in the railroad and airline industries.

To remedy this situation, the

Barge canal, highway, railroad near Herkimer, New York.



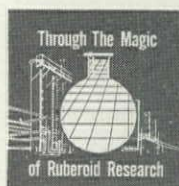


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continued

President proposed a series of far-reaching changes. They boil down to less government regulation in interurban transportation, and more government participation in urban transit. Among them:

► End ICC regulation of minimum (but not maximum) rates for railroads and trucks. This would encourage keener competition between all bulk freight carriers.

► Repeal the 10 per cent transportation tax on train and bus passenger tickets, and halve the same tax for air tickets. A new tax on jet fuel and barge fuel is proposed to help pay for construction and maintenance of airports and to continue dredging waterways.

► Increase tax relief by allowing all regulated public utilities, including transportation, to apply one bad year's losses to the succeeding seven (instead of five) years.

► View mergers that would reduce duplication of transportation facilities more sympathetically than in the past.

► Aid urban transportation problems with \$500 million in grants over a three-year period. Not only would mass transit and commuter railroads be eligible for such aid, but also highways and parking facilities. Relocation of the estimated 15,000 families and 1,500 businesses annually displaced by highway construction would also be considered eligible for funds. According to Washington sources, the largest problem facing this proposal is to get the necessary money from the House Appropriations Committee.

There is some doubt whether Congress will enact any of the President's transportation recommendations in this session; both Houses have heavy work-loads and look forward to adjournment in early summer.

STORM'S AFTERMATH: \$200 MILLION DAMAGE

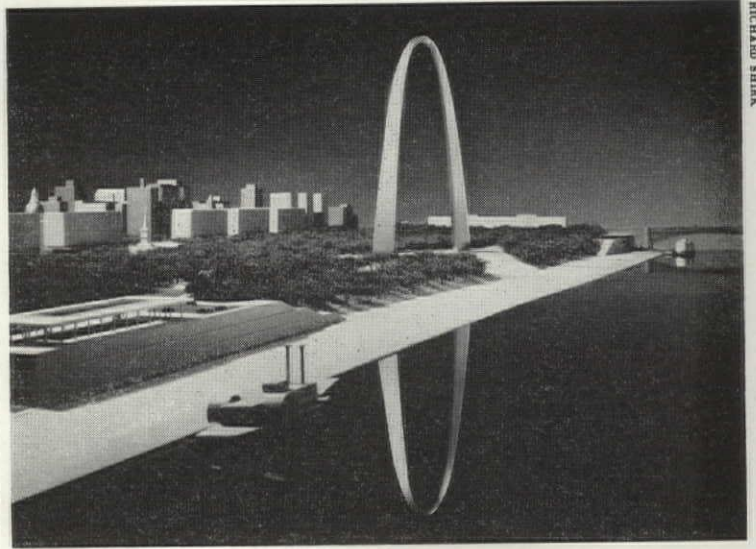
That vicious March storm along the East Coast, it seems, was the result of a freak combination of several meteorological phenomena: a storm that formed off the Florida coast and moved northward, another from Mississippi that moved eastward, and a cold wave from Canada.

The well-known outcome was a 1,000-mile-long wind front that caused havoc along the Atlantic coastline. Property damages are now estimated at more than \$200 million; 1,800 homes were destroyed; 300 people were injured. Individual states rushed to help the affected localities, and Congress moved to appropriate emergency funds to protect beach areas. But rehabilitation cannot solve a problem that the next storm may recreate; only preventive measures—now—can hope to avert similar disasters in the future. Inveterate clam digger and boatman Robert Moses (who combines natural stoicism with a prodigious memory) wrote in the *Long Island Sunday Press*: "It is a good deal like the little people who live below Vesuvius . . . who, following an eruption, crawl



Fire Island, N.Y.

bravely back into their huts or build new ones at the same exposed locations." His suggested remedy for the south shore of Long Island: an ocean boulevard atop an 18-foot hydraulic sand-fill mound. Senator Clinton P. Anderson (Democrat, N.M.), thinks even bigger, proposes to outlaw unwise littoral construction.



RICHARD SHANK

GREEN LIGHT FOR SAARINEN'S GATEWAY ARCH

Eero Saarinen's 1948 competition-winning Gateway Arch in St. Louis is about to be constructed. Part of the Jefferson National Expansion Memorial Park, the 630-foot-high, stainless-steel structure will be completed in time for the city's planned bicentennial celebration in 1964. While the engineering problems

have long been solved, financing a transportation system inside the arch was more difficult. But last month, the area-wide transit authority, Bi-State Development Agency, offered to build and operate the elevator system in the arch with financing from revenue bonds totaling \$3 million.

FIRST QUARTER CONSTRUCTION REPORT

Total construction volume in the first quarter of 1962 rose 3 per cent over the comparable period in 1961. Not surprisingly, apartment building continued to lead the increase: some suburbs seem to have reached their farthest

practical commuting distance from downtown, so buildings must go up, not out. New households and senior citizens, moreover, want to live in apartments (see FORUM, March '62). The 36.8 per cent upswing from the

continued on page 9

NEW CONSTRUCTION EXPENDITURES, FIRST QUARTER 1962 AND 1961 (millions of dollars)

	1962			1961		%
	Private	Public	Total	Total	Change	Total in Totals
BUILDING CONSTRUCTION						
Industrial	\$670	\$87	\$757	\$881	-14.1	
Office and warehouse	554	....	554	581	-4.6	
Store, restaurant, garage	505	....	505	478	5.6	
Religious	229	....	229	226	1.3	
Educational	144	673	817	816	0.1	
Hospital and institutional	208	87	295	259	13.9	
Social and recreational	160	22	182	182	0	
Public administrative and service	....	147	147	131	12.2	
Apartments	977	150	1,127	824	36.8	
Hotel, motel, dormitory	352	25	377	365	3.3	
All other building	178	253	431	440	-2.0	
TOTAL BUILDING CONSTRUCTION	\$3,977	\$1,444	\$5,421	\$5,183	4.6	
TOTAL HOUSE CONSTRUCTION	3,369	71	3,440	3,246	6.0	
TOTAL OTHER CONSTRUCTION	1,351	1,688	3,039	3,121	-2.6	
TOTAL CONSTRUCTION	\$8,697	\$3,203	\$11,900	\$11,550	3.0	

SOURCE: BUREAU OF THE CENSUS AND MILES L. COLEMAN ESTIMATES BASED ON CENSUS DATA.

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first quarter of 1961 to the first quarter of this year also reflects a strong year-to-year gain in FHA-insured apartment mortgages.

Although industrial construction has decreased by 14.1 per cent compared to the first quarter of 1961, there was some advance in the seasonably adjusted annual rate for private industrial building, reported Economist Miles L. Colean. He added that this was particularly interesting because

there is a good deal of existing overcapacity in such structures. Last year, industrial building dropped 1.7 per cent compared to 1960.

One hopeful sign for higher construction expenditures in the future is the unprecedented amount of mortgage money available for the peak building season. This suggests a slight down trend in mortgage interest rates in the near future.

WILL TAX BILL HARM REAL ESTATE?

On April 2, Secretary of the Treasury Douglas Dillon proposed new tax provisions that could have important repercussions on the building and real estate industries. The recommendations were a) to eliminate all forms of accelerated depreciation on real estate, and b) to apply straight income tax rates to the value of properties already depreciated. At present, such gains are accorded capital gains treatment.

Realtors immediately retorted that these measures would cause a sharp decline in investment in real estate as well as a cutback in the construction industry. Such

effects "would run counter to the central purpose of the pending tax bill," said NAREB spokesman Richard H. Swesnik, before the same committee. He did recognize, however, that "accelerated depreciation on real estate has resulted in some abuses which, we believe, should be corrected by legislation."

Prospects for the bill are difficult to predict. Before Dillon addressed the Senate, the House had come up with a weaker version. One possible compromise: tone down (or eliminate) the accelerated depreciation formula, retain existing tax features.



REHABILITATION DEMONSTRATED IN NEW HAVEN PROJECT

Here is a case of rehabilitation where no one loses: 13 rundown New Haven houses on Olive and Court Streets were purchased by the city for \$153,000 as the first test of a new rehabilitation demonstration feature of the Housing Act of 1961. Approximately \$250,000 was spent on renovating the houses, which were then sold for \$278,000. The net loss of \$125,000 (two-thirds absorbed by the federal government, with the remainder paid by state and city) is considerably less than the cost of demolishing the row houses and preparing the land and streets for



CARL J. MILLER

complete redevelopment.

Increased property taxes from the 13 houses will bring an additional \$3,000 to the city every year. Mortgage financing for purchasers of the homes has been approved under Section 220 of the National Housing Act, with FHA-insured 30-year mortgages.

Elsewhere in the Court Street area, Wooster Square has been undergoing extensive private rehabilitation efforts (with city cooperation). Other cities with rehabilitation projects under way: Cincinnati, Ohio, Jackson and Mt. Clemens, Mich.



ROGER DUDLEY

CENTURY 21 OPENS

On April 21, the electronic device marking the time until the opening of the Seattle World's Fair failed some four hours before the

end of its lengthy countdown. Large crowds wandered through "Century 21" on time, however, most of them visiting Architect Paul Thiry's Theme Building. In it, a "cloud" of specially bolted aluminum cubes (left) floats above the floor. Designed by a team led by Donald Deskey Associates (Design Consultants) and Paul John Grayson (Architectural Planner), the cloud offers a glimpse at the future and its possibilities as presented through the ingenious use of recordings, models, and projected images (by Robinson-Stern Associates, Inc.) While this exhibit has been much lauded, the architectural star of the Fair is Minoru Yamasaki's Federal Science Pavilion. (For a full report on the Seattle World's Fair, see next month's FORUM.)

UGLINESS UNMASKED AT CONFERENCE

Addressing the "First Conference on Aesthetic Responsibility," President Kennedy's Special Consultant on the Arts, August Heckscher, remarked that a civilization "begins to be a living whole when the idea of beauty has found its place alongside the pressure of utility and the spur of need." Quite obviously, the U. S. does not, at present, recognize this idea of beauty, and the April 3 conference was held to find answers to these three questions:

- ▶ What are our aesthetic values?
- ▶ What are the aesthetic responsibilities of government, business, and institutions?
- ▶ Who is responsible for ugliness?

Eighteen panel members struggled manfully, if not grimly, with these problems. Their approaches to the problems ranged from the whimsical (Robert Beverly Hale, curator of American painting, Metropolitan Museum of Art) to the analytical (Dr. John L. Schi-

mel, psychiatrist); from the specific (Jerome Belson, international director of housing, Amalgamated Meat Cutters and Butchers Workmen of America) to the general (Eric Larrabee, managing editor, *Horizon* magazine).

Some, like Painter Ad Reinhardt, found ugliness everywhere; others, like Russell Lynes (managing editor, *Harper's* magazine) discovered that "today's clichés of beauty were yesterday's ugliness." Ornette Coleman, jazz musician, performed on his saxophone.

The all-day meeting at the Hotel Plaza's Grand Ballroom (rococo) was concluded by New York AIA's Design Committee Chairman, Richard Snibbe. His forthright "Plan for Action" summed up the meaning of the conference: the blight of ugliness is spreading over the country and recognition of the problem is the first step in making a place for "the idea of beauty" in America.

COMPETITION FOR CINCINNATI SYMBOL

A competition for the design of a permanent symbolic structure in Cincinnati's proposed Riverfront Historical Park has been announced by its sponsor, The Cincinnati Association. The design should symbolize the history and character of the present city and

its future. U. S. architects can obtain further information and registration forms from the Professional Advisor, Walter A. Taylor, FAIA, Director, School of Architecture, Ohio University, Athens, Ohio. Applications will be honored until May 15.

continued on page 11

Mo-Sai®



BEFORE

METAMORPHOSIS

A former automobile dealer's quarters offered possibilities for enlarging KSL Radio and Television Stations facilities. The old garage area was ideally suited for expansive television stages with room for new modern executive and staff offices forward. The problem . . . an antiquated front. "We would like an image of simple elegance," were the words used to describe the type of front desired. The answer . . . Mo-Sai precast concrete.

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GEORGE RACKLE & SONS CO. Cleveland 5, Ohio
GOODSTONE MFG. CO. Rochester 21, New York
HARTER MARBLECRETE STONE CO. Oklahoma City, Oklahoma
OLYMPIAN STONE CO., INC. Seattle 7, Washington
OTTO BUEHNER & CO. Salt Lake City 6, Utah — Denver, Colorado
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See you at the AIA Convention
in Dallas . . . BOOTH NO. 14

AFTER



continued

NEW YORK HOTELS: BOOM OR BUST?

Almost 20,000 of Manhattan's 80,000 hotel rooms went vacant last year. And while the rate of room occupancy has steadily declined over the last 12 years, hotel operating costs have increased.

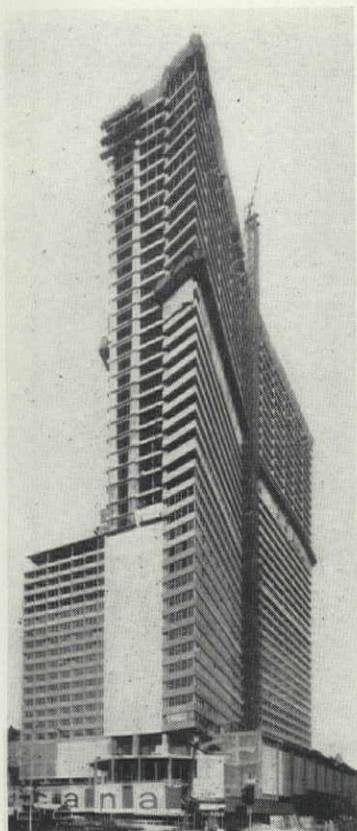
These are only two of the worries of New York hoteliers. A third puts these worries into sharper perspective: construction

of 12 new hotels and motels in Manhattan will add 9,000 rooms to the surplus capacity by 1963.

This situation was discussed by three realtors at a meeting held in New York a month ago. Marvin Kratter, chairman and president of the Kratter Corp., was optimistic, pointing to the expanding market for hotel services: more people are traveling, said he, hence more rooms, meals, and convention facilities will be needed. The declining rate of room occupancy he attributed to "physical deterioration, lack of parking, and lack of convention facilities" in older hotels.

"The measure of success of the new hotels," said James O. Boisi, real estate vice president of the N.Y. Central Railroad, "will be the measure of failure of the older ones." Older hotels may remain competitive through programs of rejuvenation, rehabilitation, and refurbishing, he added, but if the hotel trade is not to decay further, New York will have to attract more people and conventions.

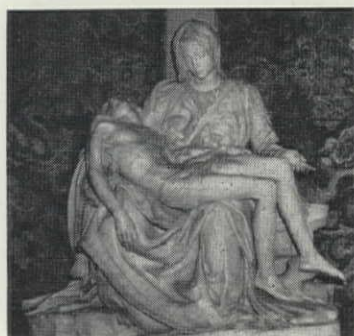
William E. Dodd, president, Knott Hotels, agreed that better convention areas would aid hotels, but denied that such attractions would justify major additions of year-round facilities. Even without the new hotels, said he, the hotel trade was endangered. "Room rates . . . are beginning to level off—more people are asking for minimum rates and many hotels are engaging in various forms of rate cutting," Dodd explained.



Architects Morris Lapidus, Harle and Liebman's Hotel Americana will add 2,000 rooms to New York's supply.

MICHELANGELO AT THE 1964-65 NEW YORK FAIR

After fostering a few absurdities, the New York World's Fair 1964-65 has come up with something almost sublime: His Holiness Pope John XXIII has agreed to dis-



play Michelangelo's statue of the "Pietà" (left) in the Vatican Pavilion at Flushing Meadows. Immediately after the announcement, Italian and other art lovers expressed their fears about possible shipping damage to the marble masterpiece. They pointed out that the statue, which has not left its niche in St. Peter's Basilica since 1749, is too precious to risk (one estimate tabs it at \$10 million). Particularly exposed is the Virgin's left hand. Nonetheless, all indications are that the work will grace the Fair along with the 1,700-year-old statue of "The Good Shepherd."



BEN MARTIN

ROCHESTER BOOSTS DOWNTOWN WITH MIDTOWN PLAZA

Last month a new kind of project was opened in Rochester, N.Y.—a project planned to give new life to the city's downtown area. Architect Victor Gruen's privately financed "Midtown Plaza" (above) consists of a tower housing a hotel, restaurant, and offices, plus an enclosed pedestrian shopping mall and arcade. The mall leads to the two department stores which initiated Midtown: McCurdy's and Forman's.

Tenants have been quickly attracted to the air-conditioned mall area: 93 per cent of the total retail floor space was occupied or committed by opening day. Parking problems have been solved by a 2,000-car garage underneath the ten-acre plaza. With all its carefully planned attributes, Midtown Plaza will be watched by many other cities with dormant downtown areas (see FORUM, June '62.)

CAL 52-1: TIFF OVER COST SPECIFICATIONS

In 1960 Architects Aaron G. Green and John Carl Warnecke completed a very attractive public housing project (Cal 52-1) on an attractive site (Marin City, Calif.). And the General Accounting Office (under the Comptroller of the U. S.) is finding fault with it. It appears that although the entire \$3.8 million project cost less than the maximum figures permitted by the Housing Act of 1937, a portion (the rooms in eight high-rise buildings) exceeded the per room budget. Specifically under fire for excessive costs are these features: 1) exterior balconies; 2) outside access corridors; 3) glass doors from each unit to the balcony; 4) tile roofs; and 5) concrete block walls surrounding the drying yards.

Responded the architects: "Architecture cannot be evaluated simply by bookkeepers' analyses and cost comparisons." Each controversial feature was explained. The moral, economic, social, cultural standards of the residents—and long-term durability of the project—had been considered. (Significantly, there are no vacancies in any of the buildings.) Also, Marin County is dedicated to conserving its natural beauty; less attractive architecture would have been not only unacceptable to the area's residents, but also completely misplaced. Finally, PHA Commissioner Marie McGuire said: Cal 52-1 "was within the statutory cost limit and . . . any adverse criticism is unfortunate; the project is well designed."

MADISON, WIS. AND FRANK LLOYD WRIGHT

Sixty per cent of Madison's voters last month cast their ballots pro or con Frank Lloyd Wright's Monona Terrace project. A majority apparently voted against the \$10.5 million civic center on Lake Monona, in what seemed an Alice-

in-Wonderland kind of election: To support the project, a voter had to write "No," to defeat it, "Yes." The referendum marked the fourth time a civic center plan has been squashed in Madison since 1909.

continued on page 13

These are the
PRAIRIE SHORES APARTMENTS
in Chicago



► Amid all the exciting new construction underway in Chicago, Prairie Shores has a special significance of its own—both for the city and for the nation. Here are five multi-story apartment buildings with a total of 1677 units on Lake Michigan, at the very front door of the city's Loop, which present a living testimonial that private enterprise, with the cooperation of the Housing and Home Finance Agency and an enlightened city administration, can provide attractive rental housing for those in the middle-income bracket.

► Prairie Shores is a FHA 220 project each unit of which was fully rented on completion. Rentals average \$35 per room, evidence that the best in rental housing can be built for the group that needs it most. Draper and Kramer created the project and were primarily responsible for acquiring the land, developing and laying out the buildings, arranging both the construction and permanent financing and now manage the project. Thus, Chicago now has a bright new neighborhood where only a few years ago it was burdened with a dismal slum.

Loebl, Schlossman & Bennett, Architects
Stephanie S. Kramer, Landscape Architect
Sasaki and Walker, Consulting Landscape Architects
Sumner Solitt Company, General Contractors

**DRAPER
AND
KRAMER**
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CHICAGO

People in the news

**FRANZEN WINS THREE AWARDS**

First there was a national AIA Award of Merit; then, the N.Y. Architectural League award (see below), and finally, this year's \$1000 Arnold W. Brunner Memorial Prize in Architecture of the National Institute of Arts and Letters—all in the past few weeks. The recipient: **ULRICH FRANZEN**. The Brunner prize is given to an architect who shows promise of contributing to architecture as an art. Best known for several private residences, including his own house, and a garment factory in Long Island City, Franzen is a visiting Professor at Yale University School of Art and Architecture.

ARCHITECTURAL LEAGUE AWARD

No gold medal in architecture was awarded this year by the Architectural League of New York, but a silver medal went to **MARCEL BREUER** for his St. John's Abbey, Collegeville, Minn., and to **LUDWIG MIES VAN DER ROHE** for his Bacardi Building in Mexico City. Three honorable mentions were awarded in architecture: **ULRICH FRANZEN** for his house in Essex, Conn.; **THE ARCHITECTS COLLABORATIVE** for the Academic Quadrangle, Brandeis University, Waltham, Mass.; and **PAUL RUDOLPH**, for Sarasota High School, Sarasota, Fla. (Above buildings were published in *FORUM* in Nov. '61, Jan. '62, March '60, Sept. '61, and May '60 respectively.) The Collaborative Medal of Honor went to **IBM's Thomas J. Watson Research Center, Yorktown Heights, N.Y.** (*FORUM*, June '61) for which **EERO SAARINEN AND ASSOCIATES** were the architects; **SASAKI, WALKER, & ASSOCIATES**,

landscape architect; **SEVERUD-ELSTAD-KRUEGER ASSOCIATES**, structural engineer; **JAROS, BAUM & BOLLES**, electrical engineer; **SEYMOUR LIPTON**, sculptor.

REYNOLDS MEMORIAL AWARD

GUY LAGNEAU, MICHEL WEILL, JEAN DIMITRIJEVIC, with **RAYMOND AUGIDIER**, a team of French architects, are the recipients of the 1962 Reynolds Memorial Award for their Museum Cultural Center in Le Havre, France. The unique feature of the building is the horizontal floating aluminum sun-screen which also contributes to the elegant design of the Museum. The jury (Chairman **JOHN CARL WARNECKE**, **GYO OBATA**, **PIETRO BELLUSCHI**, **LAWRENCE PERKINS**, **SANTIAGO AGURTO CALVO**) considered the building "an honest, clean, and well-designed work of architecture" and the sun-screen "an ingenious and sensitive solution" to the problem of controlling the qualities of natural light.

MYRON EHRENBURG

**WOLFSON QUITS MARKET PLAN**

The withdrawal of developer **ERWIN S. WOLFSON** from sponsorship of Manhattan's proposed Washington Street Market Title I project was announced last month with "deep regret" by the city of New York. Wolfson's reasons: he resented the "ill-conceived and intemperate" criticism directed toward him. One critic, City Club President **I. D. ROBINS**, charged that the transaction between the sponsor and the city was "immoral" and that Wolfson was getting a "windfall." Others, including the Downtown Independent Democratic Club, pointed out that the project would not

provide any new, needed residential construction in the 24.5-city-block area. (Wolfson's plans: four commercial and three industrial buildings.) Time-consuming legal action was threatened against the scheme. Probably the most telling point against the market plan, however, was Wolfson's discovery that, under his financial agreements, he would be unable to charge rents high enough for an attractive return on his investment. Meanwhile, the city of New York continues to look for a sponsor for the \$150 million complex. Present prospects: dim.

SCHLESINGER ON THE ARTS

On April 12, the American Federation of Arts heard White House Assistant **ARTHUR SCHLESINGER JR.** commenting on the new Administration's leadership in, and attitudes toward, the arts. His verdict: if not perfect, at least very reassuring. Said he on music and drama: "In the Executive Mansion where **FRED WARING AND HIS PENNSYLVANIANS** once played, we now find **ISAAC STERN**, **PABLO CASALS**, **STRAVINSKY**, and **THE OXFORD PLAYERS**." On architecture: "There is no reason the government should build monstrosities like the new State Department Building when it also builds beautiful and delicate architecture like **EDWARD STONE's U.S. Embassy in New Delhi**." Also criticized were the government's shoddy artistic standards in stamps and coins. While the government should encourage the arts, said Schlesinger, he would be "horrified" if a federal commission dictated artistic expression.

PRIZE PRISON DESIGN

The U.S. Bureau of Prisons and the General Services Administration jointly sponsored a competition for a psychiatric hospital for federal prisoners to be built somewhere in North Carolina. The design of the group of buildings, wrote Jury Chairman **PIETRO BELLUSCHI**, "should promote an atmosphere that would be therapeutic, permitting development of self-reliance and initiative, and encouraging normal socialization and community living" among the patients. Last month came the

announcement of the winner: **A. L. AYDELOTT & ASSOCIATES** (with **CAUDILL, ROWLETT & SCOTT** and **HUGH STUBBINS**). Commenting on the winning submission, **BELLUSCHI** said that "the architect had based his design on a number of premises to fit a basic philosophy that the buildings of the center could help the psychiatrists cure the patients."



JULES SCHICK

LOUIS I. KAHN HONORED

The highest honor the Philadelphia Art Alliance can bestow, the Medal of Achievement, has been awarded to **LOUIS I. KAHN**. One of America's most creative thinkers and practitioners in the field of architecture, Kahn, 61, in 1960 completed the Alfred Newton Richards Memorial Research building on the University of Pennsylvania campus. Said *FORUM* (July '60) of this building: "an act of authentic, almost startling originality . . . polemical architecture of a very high order—accomplished, adult, humane."

NEW R.P.I. ARCHITECTURE DEAN

Presently director of the Office for Regional Development and secretary of the Planning Coordination Board for the state of New York, **GEORGE A. DUDLEY** will assume the post of Dean of the School of Architecture at Rensselaer Polytechnic Institute in September. A former member of the firm of **Harrison & Abramovitz**, he has been in government service, and from 1948-59, President of the **IBEC Housing Corporation**.

END

100 LARGEST ARCHITECTURAL FIRMS IN THE U.S.

The 100 largest U.S. architectural firms, constituting about 1 per cent of the nation's total, accounted for \$4.2 billion or 7.3 per cent of all construction during 1961, FORUM's newest survey of the field reveals. Moreover, these firms expect their individual volume to increase by a healthy average of 15 per cent in 1962.

Two factors make this performance more remarkable than it looks. First, the 1961 total of \$57.5 billion of construction put in place includes \$16.9 billion worth of highways, waterworks, and other nonbuilding construction. Thus, of the remaining \$40.6 billion spent on actual buildings and houses, the 100 largest accounted for 10.7 per cent. (Even this figure does not reflect the big firms' prominence within the profession, since an indeterminate but sizable fraction of building is not designed by architects at all.)

Second, one- and two-family houses comprised 46 per cent of the total building in 1961, and large firms are relatively inactive in this field. (Of the 100 largest, only 27 designed any houses at all. Well over half the 100 firms' \$91.9 million volume in houses was reported by only two firms: Gerber & Pancani of Newark, N.J., and Palmer & Krisel of Los Angeles. The 100 designed only one half of 1 per cent of U.S. houses built last year, and this represented only 2 per cent of their overall dollar volume.)

Thus, eliminating houses as well as highways, the largest firms' share of building construction rises to 18.5 per cent.

Biggest volume reported by a single firm: \$140 million

There are 34 newcomers on FORUM's list of the 100 largest firms since the last survey (of 1958 volume—see FORUM, Aug. '59). Two are in the top-volume bracket of \$70 million or more: Charles Luckman Associates of Los Angeles, and Samuel Paul & Seymour Jarmul of New York. (For the other newcomers, see asterisks in table, right.) Forty-nine firms are carry-overs from both earlier lists, and 17 more are carry-overs from 1958 only. Eight of the newcomers reappear on the list after an absence in 1958.

Compared with 1957 and 1958, the biggest of the big firms handled less volume last year, while the smallest handled more. Top volume reported (by two firms) was \$140 million. This would have earned these firms a tie for fourth place in 1957 (when the leader reported \$250 million), and a tie for third in 1958 (when

\$190 million was tops). The margin between the largest and smallest firms listed narrowed from \$235 million in 1957 to \$174 million in 1958 and \$124 million last year.

Not surprisingly, the big firms are concentrated where the business is. Fifty-two of them are located in the five largest cities (compared to 48 in 1957 and 1958). Los Angeles has 10, Chicago 7, Philadelphia 6, and Detroit 4. New York has 26, as many as the four other cities combined. (New York had 20 in 1957, 21 in 1958.) San Francisco is headquarters for 4 firms. Only 23 states and the District of Columbia have one of the 100 largest firms within their boundaries, and three states together have more than the other 47 states combined: New York (30), California (16), and Illinois (8).

The biggest firms have an aver-

age of 20 architects and 17 engineers on their staffs, but the range is all the way from 1 architect to 156, and from no engineers to 236. Sixteen firms do not employ engineers, relying on consultants. On the other hand, 27 of the 100 firms employ more engineers than architects.

There is a similarly wide divergence among the firms in degree of specialization. For example, office buildings accounted for all of Carson, Lundin & Shaw's volume, but no single building type accounted for more than one-fourth of the volume of Eggers & Higgins or Charles Luckman Associates. Forty-five firms attributed half or more of their volume to a single building type: residential—apartments, hotels, and motels—(12), educational—schools and colleges—(12), offices (8), industrial buildings (5), medical—hospitals, clinics, and institutions—(4), and retail—stores, shopping centers, and restaurants—(4).

Schools and colleges accounted for 21.3 per cent of the 100 firms' combined volume. Offices totaled 17.2 per cent; apartments, hotels, and motels, 15.1 per cent; industrial buildings, 12.5 per cent; medical buildings, 12.2 per cent; stores, shopping centers, and restaurants, 7.7 per cent; all other types, 14.0 per cent. Most often mentioned in the "other" category were social, recreational, and amusement facilities, houses, and religious buildings, but these seldom amounted to more than a small fraction of a firm's output. Mentioned less frequently, but often constituting a major portion of a firm's volume, were airports, research laboratories, military facilities, communications buildings, garages, banks, and housing for the aged.

Of 95 firms estimating their volume for 1962, 61 expect increases averaging a healthy 31.3 per cent. Twenty-eight firms foresee their volume dropping an

average of 18.6 per cent, and 6 firms expect no change. The indicated net increase is 15.6 per cent—more than twice the increase in building construction anticipated by FORUM's October 1961 forecast of 1962 building activity—suggesting a growing concentration of work among the larger architectural firms.

Quantity and/or quality

Several facts about the accompanying list should be kept in mind:

► The only common denominator is high volume. Some of the listed firms are leaders by any standard, including architectural quality. Others are not. Many firms of high talent do not appear at all. ► Work carried out abroad is not included. (Nineteen firms reported a total of \$116 million, of which two firms in the top-volume group accounted for slightly more than half.)

► Four firms are included on the basis of reported total volume although breakdowns of building type were not available for them. A number of firms are missing from the list because data was lacking. Among the firms that probably handled more than enough volume to qualify are S.J. Kessler & Sons, A.M. Kinney Associates, William L. Pereira, and Skidmore, Owings & Merrill. ► Finally, it is important to note that firms are not listed in order of their volume: within the six general groups they are listed alphabetically. Thus within each bracket firms with almost equal volume may be far apart on the list; conversely, firms with quite different volume may be listed next to each other.

Lists of building's biggest contractors and clients will appear in the June and July issues respectively. Combined reprints of the three lists may be had after August 1 for 50 cents each prepaid.

Construction put in place	Professional staff†		Type of Construction as a per cent of 1961 Total							Forecast '62
	Architects	Engineers	Offices	Educational	Industrial	Residential††	Medical	Retail	Other	
Firm (home office)										
\$70,000,000 or more**										
Welton Becket & Associates (Los Angeles)	96	39	40	15	5	17	11	9	3	+25
Leo A. Daly Company (Omaha)	70	76	9	16	17	10	9	6	33	+4
Daniel, Mann, Johnson & Mendenhall (Los Angeles)	42	47	NA	NA	NA	NA	NA	NA	NA	NA
Eggers & Higgins (New York)	40	6	20	15	15	10	20	—	20	-21
A. Epstein & Sons, Inc. (Chicago)	42	52	12	3	52	15	11	—	7	+14
Ferrenz & Taylor (New York)	21	4	—	22	—	—	71	—	7	+14
Erwin Gerber & A. Pancani, Jr. (Newark, N.J.)	7	12	5	—	—	45	—	12	38	+9
Giffels & Rossetti, Inc. (Detroit)	20	115	3	17	48	1	6	—	25	+5
Harrison & Abramovitz (New York)	40	2	72	14	—	—	6	—	8	-24
Kelly & Gruzen (New York)	20	6	10	20	—	50	12	1	7	+43
Charles Luckman Associates (Los Angeles)*	156	63	23	17	18	6	—	18	18	+33
Albert C. Martin & Associates (Los Angeles)	25	27	14	—	48	2	9	22	5	-6
C. F. Murphy Associates (Chicago)	22	45	25	5	7	—	4	4	55	-18
Emery Roth & Sons (New York)	14	—	55	—	—	45	—	—	—	NC
Shaw, Metz & Associates (Chicago)	34	12	32	4	6	58	—	—	—	+11
Samuel Paul & Seymour Jarmul (New York)*	11	1	—	2	1	95	1	—	1	+38
Voorhees, Walker, Smith, Smith & Haines (New York)	50	41	23	24	44	4	2	—	3	NC
\$50,000,000 to \$70,000,000										
Chapman, Evans & Delehanty (New York)	19	5	10	15	1	23	30	3	18	+83
George L. Dahl (Dallas)	15	15	23	12	2	3	8	15	37	+7
Victor Gruen Associates (Beverly Hills)	27	14	4	2	2	15	3	45	29	+27
Albert Kahn Associated Architects & Engineers (Detroit)	20	30	20	5	60	—	—	—	15	+2
Lockwood Greene Engineers, Inc. (New York)	13	43	4	4	90	—	2	—	—	NC
Perkins & Will (Chicago)	63	16	13	76	—	—	10	—	1	+10
Schmidt, Garden & Erikson (Chicago)	35	31	—	5	10	—	80	—	5	NC
Smith, Hinchman & Grylls Associates, Inc. (Detroit)	21	38	31	8	22	—	22	—	17	+33
Urbahn & Brayton (New York)	26	3	3	22	—	5	45	—	25	+24
\$35,000,000 to \$50,000,000										
Carson, Lundin & Shaw (New York)	21	—	100	—	—	—	—	—	—	+10
Chatelain, Gauger & Nolan (Washington)	13	3	42	—	12	8	—	—	38	-15
Cohen, Haft & Associates (Silver Spring, Md.)*	12	—	5	—	—	65	—	2	28	+33
Ellerbe & Company (St. Paul)*	23	48	4	31	39	—	25	—	1	+2
John Graham & Company (Seattle)	40	36	12	1	2	8	—	76	1	+20
Melvin Grossman (Miami Beach)*	1	1	3	—	—	92	—	5	—	-49
Harbeson, Hough, Livingston & Larson (Philadelphia)	20	50	46	43	4	1	2	—	4	-23
Holabird & Root (Chicago)*	25	30	28	18	19	8	—	5	22	-7
Ketchum & Sharp (New York)*	15	—	NA	NA	NA	NA	NA	NA	NA	NA
Vincent G. Kling (Philadelphia)	37	1	61	2	23	—	12	1	1	+18
Morris Lapidus, Harle & Liebman (New York)*	7	—	18	7	3	68	—	—	4	+353
William Lescaze (New York)	3	—	5	15	1	44	34	—	1	+36
Mills, Petticord & Mills (Washington)	13	12	30	28	10	—	2	2	28	+5
Palmer & Krisel (Los Angeles)	3	—	20	—	1	11	—	2	66	+11
Alfred Easton Poor (New York)*	18	2	27	2	9	1	40	—	21	+22
Sargent, Webster, Crenshaw & Folley (Syracuse)	28	10	8	55	6	10	6	1	14	+1
Sverdrup & Parcel & Associates (St. Louis)	18	236	7	1	72	—	2	—	18	NC
Frederic P. Wiedersum Associates (Valley Stream, N.Y.)	6	2	—	88	—	11	—	—	1	+5
Paul R. Williams & Associates (Los Angeles)	4	6	13	25	—	5	15	—	42	-20

*Newcomers to list of 100 since 1959 survey

** Firms are listed alphabetically within ranges given

† Registered architects and licensed engineers only

†† Apartments, hotels, motels—does not include houses

NA = Not available NC = No change

Construction put in place	Professional staff†		Type of Construction as a per cent of 1961 Total							Forecast '62
	Architects	Engineers	Offices	Educational	Industrial	Residential††	Medical	Retail	Other	
Firm (home office)										
\$25,000,000 to \$35,000,000										
Dalton-Dalton Associates (Cleveland)*	11	21	5	20	25	—	20	5	25	+19
Fellheimer & Wagner (New York)	11	17	8	18	25	—	11	5	33	+15
Gehron & Seltzer (New York)	12	—	—	55	—	—	40	—	5	-4
Wyatt C. Hedrick (Fort Worth)	21	18	6	26	26	13	25	—	4	+11
Hudgins, Thompson, Ball & Assoc., Inc. (Oklahoma City)	12	28	55	22	7	1	10	1	4	-1
Kistner, Wright & Wright (Los Angeles)	15	12	5	75	10	—	—	—	10	+11
Lankton, Ziegele, Terry & Associates (Peoria)	12	14	8	41	11	6	22	5	7	-22
Loebl, Schlossman & Bennett (Chicago)*	15	10	1	14	—	8	7	66	4	-33
Lyles, Bissett, Carlisle & Wolff (Columbia, S. C.)	15	15	5	15	17	18	3	15	27	-14
Naramore, Bain, Brady & Johanson (Seattle)	21	2	46	31	2	—	10	—	9	+17
Robert & Company Associates (Atlanta)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sherwood, Mills & Smith (Stamford, Conn.)	24	1	2	69	13	—	9	—	7	+3
William B. Tabler (New York)	8	2	—	—	—	95	—	3	2	+107
Adrian Wilson & Associates (Los Angeles)	19	35	16	15	—	21	32	—	16	+44
\$20,000,000 to \$25,000,000										
Anshen & Allen (San Francisco)*	30	—	36	19	6	3	—	—	36	NC
Ballard, Todd Associates (New York)*	7	—	—	30	1	68	—	—	1	+8
The Ballinger Company (Philadelphia)	10	15	—	20	45	—	15	15	5	+14
Claud Beelman Associates (Los Angeles)	7	1	90	—	10	—	—	—	—	+36
Robert L. Bien (New York)	3	—	17	—	—	77	6	—	—	+55
John S. Bolles (San Francisco)	7	2	—	—	63	12	—	25	—	+2
Preston M. Geren (Fort Worth)*	8	8	7	31	2	1	22	36	1	-31
Harley, Ellington, Cowin & Stirton, Inc. (Detroit)	23	17	55	10	20	—	5	—	10	+67
Hayes, Seay, Mattern & Mattern (Roanoke)*	10	27	10	30	30	—	20	5	5	-36
Hellmuth, Obata & Kassabaum, Inc. (St. Louis)*	25	5	36	20	—	6	24	1	13	-3
Howell, Lewis, Shay & Associates (Philadelphia)*	16	5	5	67	1	4	6	1	16	-2
Hunter, Campbell & Rea (Altoona, Pa.)	13	6	—	76	8	—	8	8	—	-21
Louis C. Kingscott & Associates, Inc. (Kalamazoo, Mich.)*	12	7	5	70	10	—	5	—	10	+24
William E. Lehman (Newark, N. J.)*	7	—	4	28	6	60	—	2	—	+16
John C. Lindsay & Associates, Inc. (Santa Monica, Calif.)	7	14	7	5	4	24	28	2	30	+108
Charles H. McCauley (Birmingham, Ala.)	8	5	1	40	3	10	25	1	20	-10
Samuel I. Oshiver & Associates (Philadelphia)*	4	11	20	—	—	80	—	—	—	-5
Pedersen & Tilney (New York)*	10	2	2	7	2	66	16	—	7	+84
Reynolds, Smith & Hills (Jacksonville, Fla.)*	17	46	29	9	25	1	30	2	4	-14
Eero Saarinen & Associates (Hamden, Conn.)*	30	2	4	13	22	—	—	—	61	+19
Shreve, Lamb & Harmon Associates (New York)	13	1	67	12	9	—	—	—	12	-54
Thomas E. Stanley (Dallas)*	20	8	36	3	4	28	—	18	11	+46
Stone, Marracini & Patterson (San Francisco)	18	—	27	—	—	—	68	—	5	-20
Wise, Simpson, Aiken & Associates (Atlanta)*	6	2	36	2	9	15	—	6	32	+46
\$16,100,000 to \$20,000,000										
Abbott, Merkt & Company (New York)*	7	25	—	—	15	—	—	63	22	+11
The Architects Collaborative (Cambridge, Mass.)*	30	2	1	54	—	—	7	30	8	+3
Caudill, Rowlett & Scott (Houston)	23	10	5	93	—	—	2	—	—	+36
The Cerny Associates (St. Paul-Minneapolis)	14	9	4	22	1	4	14	8	47	+8
Lathrop Douglass (New York)*	8	—	7	—	—	—	—	85	8	+53
Kahn & Jacobs (New York)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kiff, Colean, Voss & Souder (New York)	32	2	—	20	—	—	80	—	—	+63
King & King (Syracuse)*	12	2	—	40	23	1	31	—	5	-29
Knappe & Johnson (Scarsdale, N.Y.)*	10	1	—	92	—	—	—	—	8	-28
Lennox, Matthews, Simmons & Ford (Indianapolis)	11	4	8	40	20	10	—	20	2	-3
Marshall & Brown (Kansas City, Mo.)*	17	4	6	42	4	10	2	1	35	+29
Neutra & Alexander (Los Angeles)*	6	—	1	25	—	—	—	—	74	NA
J. N. Pease & Company (Charlotte, N.C.)	14	21	15	11	39	3	24	4	4	+36
Saunders & Pearson (Alexandria, Va.)*	8	1	14	9	—	24	20	25	8	-7
Steward-Skinner Associates (Miami, Fla.)*	6	5	28	—	14	35	3	—	20	+1
Thalheimer & Weitz, (Philadelphia)	14	8	10	20	10	22	20	12	6	+6
John Carl Warnecke & Associates (San Francisco)	24	—	25	32	24	1	9	7	2	+11

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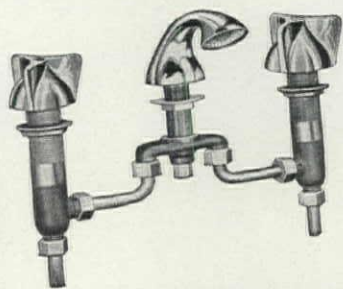
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Figured Maple	10-435	11,335 ft.	16'6"
Brazilian Rosewood	44-1237	4,329 ft.	17'3"
Teak	11-1457	9,357 ft.	15'2"
East Indian Rosewood	78-52	3,029 ft.	12'2"
Wormy Chestnut	42-127	3,244 ft.	14'2"
Macassar Ebony	39-64	2,775 ft.	8'8", 8'10"
Hawaiian Koa	18-53	7,253 ft.	14'2"
Figured English White Harewood	53-20	8,902 ft.	10'6"
English Brown Oak	29-119	9,429 ft.	10'3"
Australian Walnut	35-67	2,606 ft.	10'9", 11'4"
Quartered American Walnut	8-9523	3,209 ft.	12'10", 14'8"
Jeweltree	33-39	8,372 ft.	15'4"
French Walnut	61-74	19,138 ft.	8'2", 8'4"
Amazoue	79-1	3,699 ft.	10'4", 11'2"
Yewtree	49-67	7,261 ft.	9'3"



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THE ARCHITECT AS SUPERMAN

Forum: Mr. Purves is so right ("The Architect and the Superman Myth"—FORUM, March, '62). The public will want architects more if it sees architects doing what no one else does so well, and not attempting what others do so much better. The greatest buildings are the product of a powerful client making intelligent demands on a talented architect. Client and architect are coauthors, and the building is a product of their two very different kinds of power.

HARWELL HAMILTON HARRIS
Architect

Raleigh, N.C.

Forum: Lack of modesty and of awareness of the formidable tasks to be solved by our profession must cause dangerous pitfalls. The power of decision is not with us; we must learn the viewpoints of those who are in power, and not only respect them, but try to win them over.

I have advised many of our younger colleagues to try to become members of the councils of their towns and cities. If they should sit at the side of ignorant politicians, they may find opportunities to convert them to broader aspects. Such persuasion, when attempted with a humble state of mind, may succeed, particularly when the architect is wise enough to leave the glory to the other fellow.

When the AIA goes on to promote the "Master Builder," we are in my opinion still amiss regarding one highly important component which cannot be detached from this title: that is, field training in the building process for the would-be architect. Architecture and building have too much drifted apart, and here I see also one of the reasons for the arrogance Purves so rightly castigates. This problem waits to be solved in a way which must avoid the present "packaged deal."

Your example of Ming Pei is very apt. I think that Pei, through his training in the Zeckendorf office, has enormously broadened his horizon and his knowledge of those important viewpoints—real estate, financing, politics—which the architect does not usually learn in his training. It is rare to find such comprehensiveness in our profession, but it should certainly be the final aim of it.

WALTER GROPIUS
Architect

Cambridge, Mass.

Forum: It is always to be deplored when there is an assumption that an architect knows all—is a city planner, a social planner, interior decorator, and builder. It is a team which does this well, not an individual. The allied things become an arm of the architect when used that way.

All things, power included, come only from performance. No words can be substituted for the deed.

WILLIAM W. WURSTER
*Dean, College of Environmental Design
University of California*

Berkeley

Forum: I agree with every word Ned Purves says and would have added a thousand more (which would have ruined it). Actually, our real role in the nation appears to me to be so much more interesting than that of "superman" anyhow. A superman must be a very dull person—no vices, no problems, no buddies, and no chance to improve.

As I see our role at its highest and best, it is to try to be Cardinal Richelieu to the client's Louis XIII, to sit at his right hand and quietly "educate power."

As a profession, we are so far from sitting in the seats of the mighty that it is too sad to be even considered ridiculous. For example, one of the most representative groups of nationally powerful businessmen and educators in the U. S. is the Committee for Economic Development, which undertook two years ago a study of metropolitan growth. Of its membership, restricted to 300, not one architect or planner or anything near was actually included in the organization. Through Ned Purves' efforts, one architect was finally elected.

NATHANIEL A. OWINGS
Architect

San Francisco

FORUM: FULLY AGREE WITH NED'S OVERALL ATTACK. MUTUAL ADMIRATION SOCIETY APPEARS TO BE THE MOST CONTINUOUS AND TIME-CONSUMING PART OF ALL OUR PROFESSION'S MEETINGS.

THE PROFESSION IS PROBABLY ABOVE THE COMPETENCE OF ANY SINGLE INDIVIDUAL. THIS IS ONE OF THE REASONS I HAVE FIVE PARTNERS THANK HEAVEN.

PHILLIP J. DANIEL
Architect

Washington, D.C.

Forum: I hope the article is not intended to discourage the well-meaning, talented architect, who may have the abilities to improve the physical aspects of our society, from trying to do as much as his capability will permit. I submit that power is not limited to money, or military capabilities, but that there is a power of the "realizable" of talented vision. I would like to think that our profession may occasionally contribute such a leader.

Schools are often overzealous in their statement of our possible position in society, before we have earned it (if ever), while not telling the students what they must do to approach this achievement. But I would rather have it so encouraged than not!

MAX ABRAMOVITZ
Architect

New York City

Forum: My basic disagreement with Purves is that he is not speaking for "the architect"—that nameless symbol he employs—but rather for his own opinion of a few architects. Today's architects with large offices offer a more complete range of services than any

in the history of architecture. However, we are all deeply committed and dedicated to the practice of architecture, and our knowledge convinces us that clients today need more and different services in connection with their building programs. They must get good advice somewhere, and many times an architect, if he is willing to absorb the client's requirements on his own terms and then consider them in the specific circumstances and his own range of experience, is able to be of help.

If, as architects, we do a responsible and creative job, then architects as a body will become more influential in their communities and in the world. We have come a long way, but there is still much further to go.

WELTON BECKETT
Architect

Los Angeles

Forum: "The Architect and the Superman Myth" is an illuminating exposé of the alleged mass arrogance of our profession.

Purves' long tenure at the Octagon was obviously a traumatic experience, as it would be for any sensitive person in his position. He had to put up with some extremes of temperament and a disproportionate number of genius types who believe they have the right to push the Octagon staff around because they stick fifty bucks into the treasury.

Purves has done the profession a favor in pulling off the veil from our collective personality. His criticisms, if read with compassion and an open mind, could be good for us.

HENRY L. KAMPHOFNER
Dean, School of Design

Raleigh, N.C. North Carolina State College

Forum: Architects should start practicing a little more self-analysis, and a little less self-esteem.

With our laboratories turning out new and more complex materials and methods every day, the architect certainly cannot become the "Master Builder," or the source of all knowledge. He may and should, however, gather together a staff to enable him to advise his clients on costs, economics, loans, leases, law, and procedures. He should learn all he can about these things himself. If the architect does not have a competent "team" of his own, I doubt that he will ever be able to head up the construction industry "team."

HERBERT H. JOHNSON
Architect

Miami

Forum: Ned Purves is right in cautioning us "mushroom eaters" not to promise the public more than we can perform.

On the other hand, I am convinced that the architect of the future must indeed be a superman by our current standards if the problems of planning and design of the next 40 years are to be solved. A new breed of architect must be attracted to the profession, because the career of the future architect is one of the most vital and demanding careers in our future society, calling for dif-

ferent stock and different preparation from that which supplied the profession in the past.

ROBERT E. ALEXANDER
Architect

Los Angeles

Forum: I commend Ned Purves for his forthright and timely article.

I am all for the architect being a leader, but before he can become the leader he will certainly have to set a higher standard of performance that will earn him the respect of his clients and members of the construction industry. This respect cannot be attained by the continual bombardment of the public and the industry with self-laudatory statements that have no substance.

KENNETH E. WISCHMEYER
Architect

St. Louis

Forum: We are in debt to Mr. Purves for his lucid expression on the frailties of our profession.

Those architects who have been attracted to architecture because of its complex challenges, and who have dedicated themselves to the solution of its functional and financial as well as visual problems, are constantly embarrassed by its "angry young men." These "angry young men" are more concerned with their ego and the "clean approach" than their responsibility to the people and businesses they are housing.

J. L. FOLLETT
Architect

New York City

Forum: The AIA Gold Medal Award should go to its retired executive director, Edmund R. Purves. His article should be required reading at every chapter of the AIA, and should be read by the Dean of Architecture of every college to each graduating class.

J. S. ROSS
Architectural and Design Division
Superior Shower Door Co.

Los Angeles

EERO SAARINEN

FORUM: CONGRATULATIONS ON YOUR STORY ABOUT EERO SAARINEN, A GREAT ARCHITECT, AND A WORTHY GOLD MEDALIST (APRIL, '62). THOSE WHO WORK FOR PROMPT RECOGNITION OF SO GREAT A TALENT ALSO DESERVE SPECIAL COMMENDATION.

GENE MACKEY
Architect

St. Louis

DEMOLISH PENN STATION

Forum: I was delighted to read in your April "News" section that the Pennsylvania Station will definitely be demolished. I do not share the opinion of the thousands that think it one of Charles Follen McKim's masterpieces—other than a masterpiece of waste space. To quote the late Francis de N. Schroeder, Editor of *Interiors*, "It is an outstanding

continued on page 20

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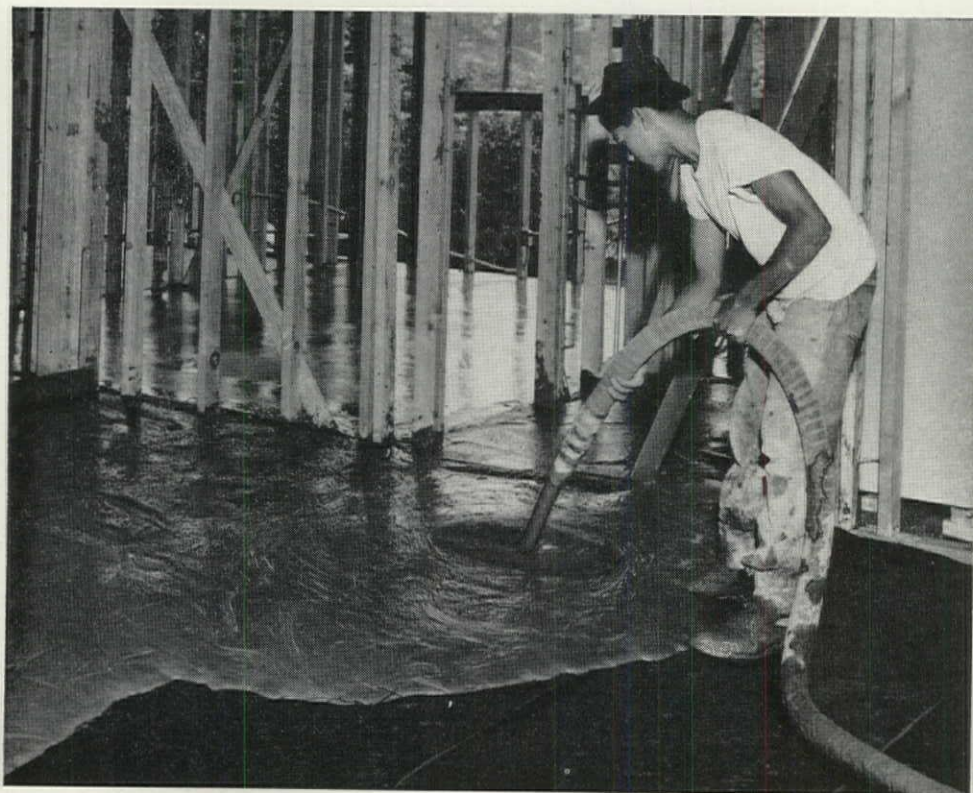
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example of a public building failing to perform its function."

Why New York Park Commisisoner Newbold Morris would wish to preserve the Doric columns—which look too much like the Brandenburg Gate for comfort—I cannot understand.

New York City

PAUL R. KANE

BEAUTIFUL ISSUES

Forum: I now find that I have seen every issue of FORUM published in the last 40 years and your last two issues are the most beautiful of all.

We must admit that modern architecture can be repetitious. As your late editor, Howard Myers, used to say when confronted with the latest batch of modern work, "The same old new stuff."

It is therefore refreshing and inspiring to have historic buildings such as Louisburg Square and the University of Virginia to remind us that, after all, we do have some architectural heritage.

EDWARD DURELL STONE

New York City

Architect

CORNELL'S ARCHITECTURE

Forum: "Cornell Rediscovered Architecture" by Walter McQuade (FORUM, Feb. '62) is an excellent piece of constructive criticism by a sensitive critic.

BURNHAM KELLEY

Dean, College of Architecture

Ithaca, N.Y.

Cornell University

VIRGINIA'S CAMPUS

Forum: Your article in February on the University of Virginia is an excellent reminder of what campus environment should be.

JAMES REECE PRATT

Dallas

Architect

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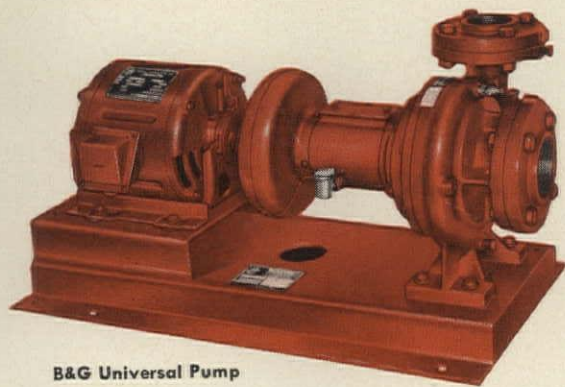
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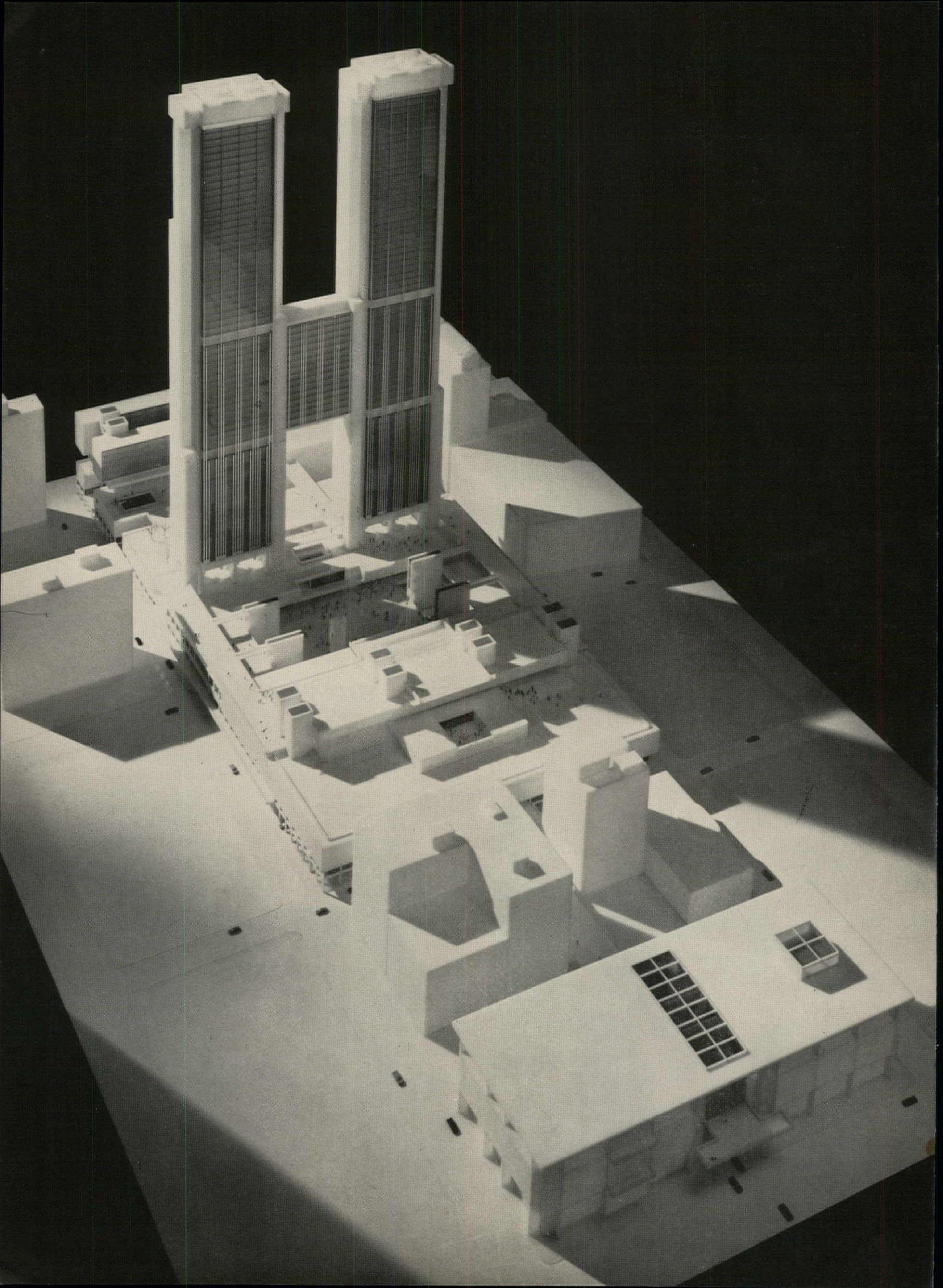
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In the belief that Dallas's "answer to the Fort Worth plan" is of major significance as a city planning concept, FORUM devotes all of an enlarged "Projects" section to it this month.

DALLAS PUTS CITY-CORE PLANNING INTO SPACE

Prominent in the model shown opposite are proposed twin towers, 60 stories high, whose most likely backer and tenant will be the Texas Bank & Trust Co. of Dallas. The 6-block private redevelopment project to which they belong is called "Main Place," and is intended to catalyze another 60 blocks, and later the whole central spine of Dallas, into a giant urban transformation.

A powerful group of Dallas capitalists got their model from a team of Columbia University economic experts and graduate students of architecture and planning led by Dean Charles R. Colbert. Their basic idea is almost distressingly simple—and potent: "Put city planning into the third dimension." The entire city core, not just parts, is conceived as a three-dimensional envelope, treated throughout as a three-dimensional space grid. This governs the arrangement of buildings, open spaces, traffic and parking, zoning, and utilities, whether at grade level or in the earth or in the air.

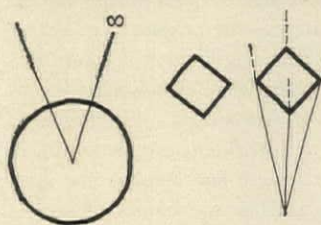
The underlying precepts, summarized at the right, would apply to most large U.S. cities. Virtually all implements are familiar: what is radical is the cumulative impact of their combination. Downtown is designed almost like a building, with utilities, heavy deliveries in the subbasement, parking in the basement, auto access at street level, pedestrian concourses at the mezzanine, and zoned building uses above.

A great advantage of the Dallas principle of sorting by levels is that traffic need not be barred from the core for safety but can sweep through efficiently; yet pedestrians and parked cars are both kept safely out of moving traffic lanes.

In zoning, too, Dallas gains by using stratified as well as mapped divisions. In general, the Main Place idea puts emphasis on clumping related uses together in preference to merely segregating distasteful uses from one another. It mixes commerce, industry, government, and culture.

Go-ahead signals were expected probably before AIA's national convention in early May in Dallas. W. W. Overton, chairman of Texas Bank & Trust and of the downtown business men's association, and his son W.T., the bank president, were strongly involved. Interest was reported on the part of Clint and John Murchison, powers in Texas. The mayor, city manager, and both newspapers were sympathetic. Vincent A. Carrozza was coordinator. FORUM's building cost guess: over \$55 million for the tower.

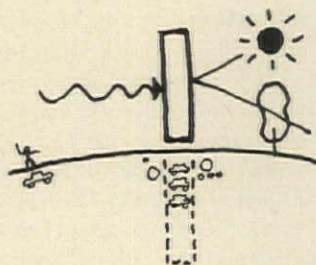
Model of "Main Place," first sector of the Dallas plan. Front to back: symphony and opera hall; block of existing buildings; stores; department store with museum above it and an arena on the roof; twin office towers; motels. Apartments and federal office buildings are on flanks.



THE BASIC PRECEPTS

For years Columbia's ex-banker realty economist, Ernest M. Fisher, had taught students to describe accurately even what is obvious. Thus real estate was viewed as more than a two-dimensional lot: "It extends from the center of the earth to infinity; it is a volume, not a plane."

On this impeccable truism the whole new three-dimensional planning of Dallas has been rested, along with a new method for planning any city.



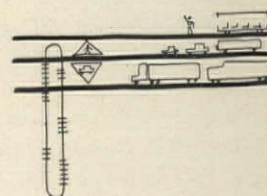
"In the core, man should occupy the space above ground. He deserves breeze, sun, light, association with growing things. Travel containers, like utilities, should be shed like an overcoat and stored belowground at maximum densities," say the planners.

The three types of traffic commonly found on streets should be segregated on three levels. At the top, open to sky and corresponding to today's street, is a pedestrian level and a slow-moving circumferential conveyor; in the middle, below the street, auto-

mobiles, taxis, city buses; at lowest level, the "creatures of the highway: trucks and long-distance buses."

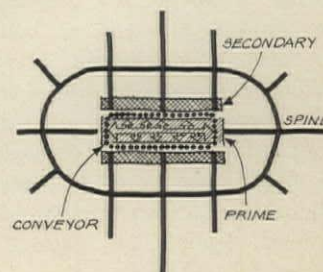
Ramps let wheeled traffic "switch" vertically from one level to another, for such purposes as loading.

"People, goods, and utilities must be distributed vertically without



interfering with movement in the several horizontal planes." Hence, vertical "streets" or rights-of-way are systematically and perpetually provided for them (elevators).

"Optimum concentration without congestion" is made possible by the vertical stacking. It can be maintained within horizontal distances which are limited in extent only by the acceptable travel time between their extremities. On both sides of a spine or center line, the prime area will lie within easy walking distance. At this distance from the spine, a slow-moving loop conveyor may be put in, lengthening the spinal area available for concentrated development because of easy access.



continued on page 44

The Dallas plan (right) shows how the basic thinking on the previous page was applied to this city of just under 700,000, rapidly growing. The Dallas spine-shaped core embraces some 60 blocks (A in the plan), well inside a proposed second distributor (B) and the outer loop highway (C).

The "Main Place" project shown in the other drawings and the frontispiece (page 42) is a 9¼-acre demonstration of the principles in detail, and lies at the west end of the spine, centering on the present intersection of Main and Griffith Streets. On all drawings, the numbers 1, 2, 3, represent new commercial construction: (1) a block of stores, to include a department store at the second level, topped by a museum and by recreation (including bowling and a roof arena); next to that, between (1) and (2), an open pedestrian plaza (called "Dallas Square") one story above the street level which is glimpsed through light wells and shows dark gray in the perspective. Then, (2) a 60-story twin tower presumably for the bank—another bank skyscraper in the banking city; (3) a pair of new hotel-motels. The letters (a) and (b) represent other buildings contiguous to "Main Place"—an opera and symphony hall building (a), and an unassigned block (b) which at present is left with existing buildings (see model, page 42). As shown in the bottom plan, a government office building is foreseen in the lower right corner; the slabs at the fringe of the area are apartments. All these things together make "Main Place" a demonstration of the rounded, productive "cluster."

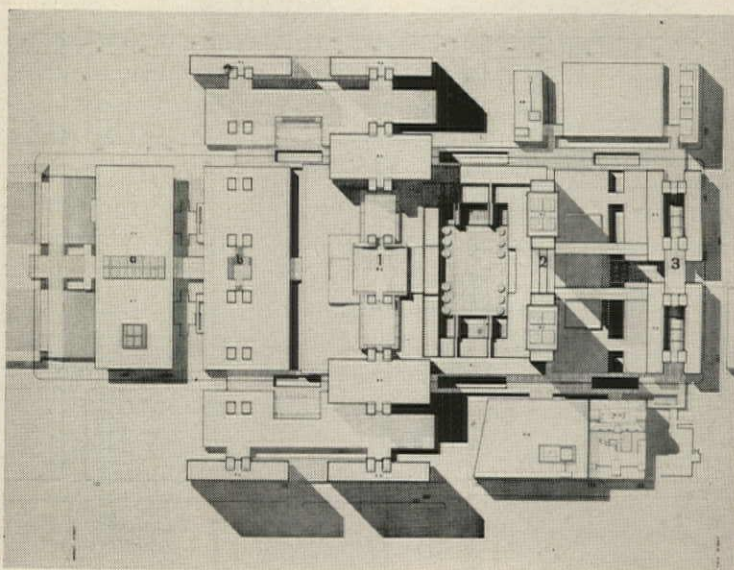
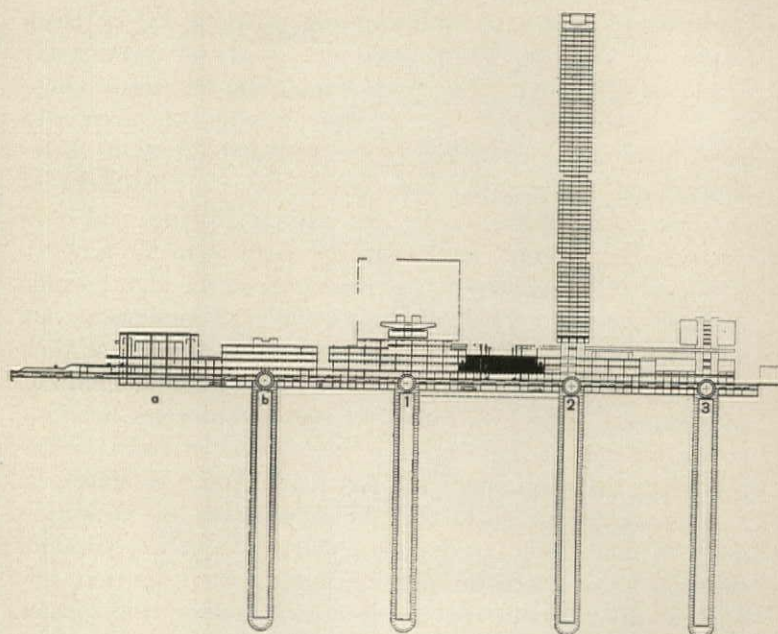
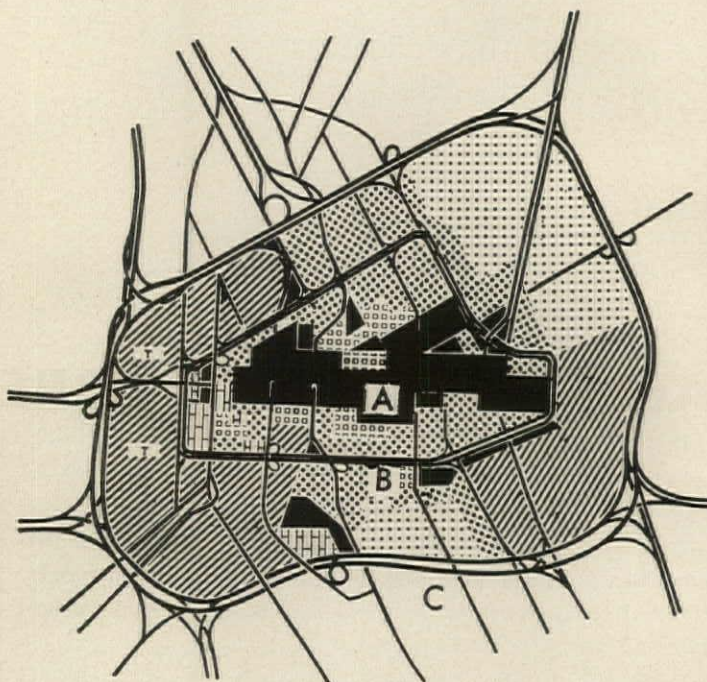
Zoning by levels shows in all the detail drawings. The whole

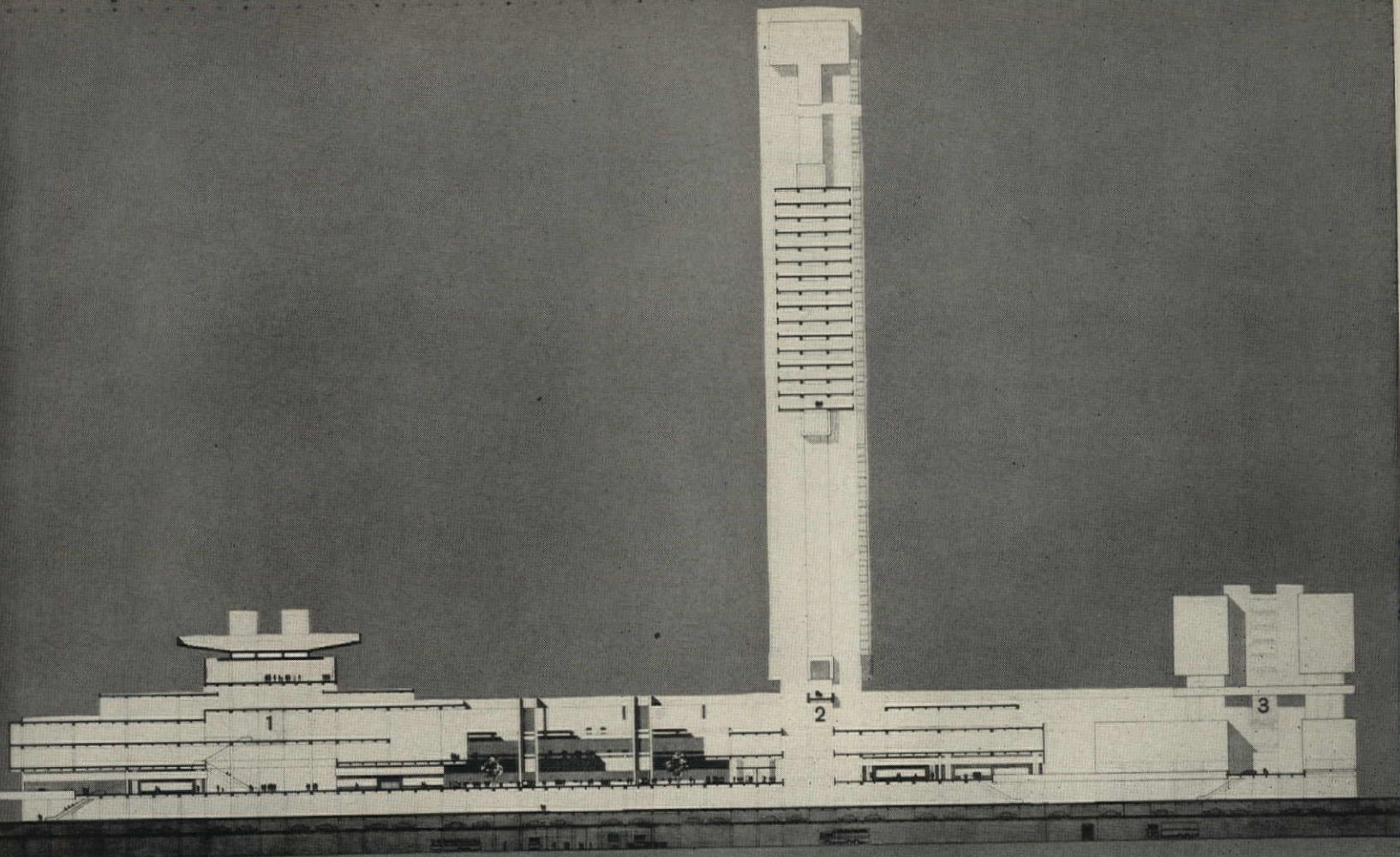
"Main Place" area would be excavated as the project went ahead, and pits dug (b, 1, 2, 3) for 600-foot-deep wheel-and-bucket lowering of temporary cars, recovered on a scheduled redelivery basis. The lowest flat level is for storage, and for movement of service vehicles and long-distance buses. The next is for long-term self-parking. The third, at existing street level, is for movement of passenger cars, taxis, shuttle buses. Here the pedestrian is separated from his "travel container," and automobiles enter and leave the pit system. The next two levels are exclusively pedestrian, and the topmost provides recreation.

A rich, full life is indicated in the arrangements as a whole, better than competing, and less urban, offerings.

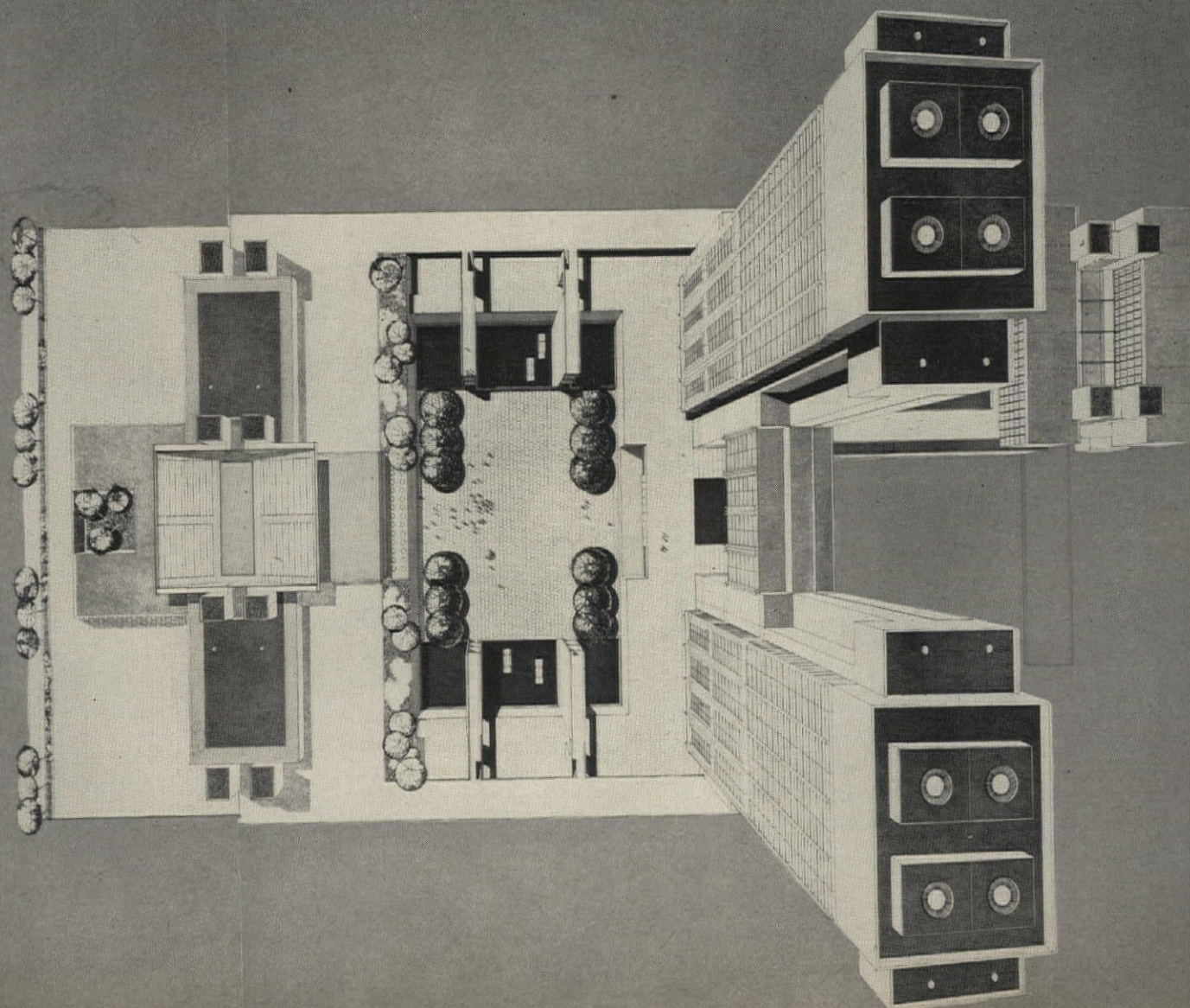
As education, the 12 Columbia architectural graduate students and four planning graduates (from seven countries) got an extraordinary advantage out of association with experts: in economics not only Ernest M. Fisher but Larry Smith, the great feasibility specialist; also sundry engineers. And again the art of presentation was carried to a high level, especially as regards the use of graphic symbols. Teachers were Stephen Carroll, urban planner, and Key Kolb, designer-critic. Others contributing on faculty were Architects Harwell Harris, Noel McKinnee, Richard A. Miller.

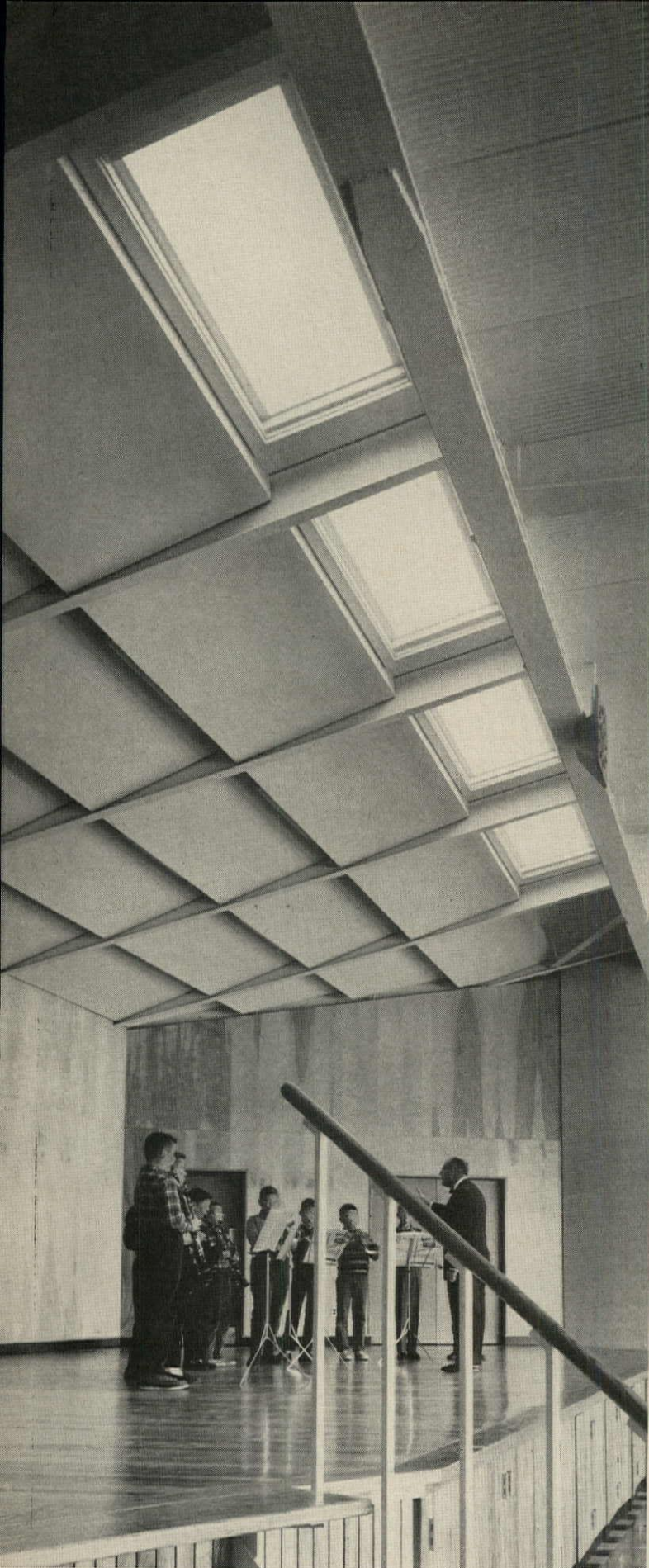
Support, business and local-political, would seem to be on hand in abundance. Robert Dowling of City Investing was the one who first stirred Dallas, spurred by work he had seen at Columbia in classes and drafting rooms.





In section, Dallas's "Main Place" scheme (above) shows two levels underground, five above; "Dallas Square" (below) is one level above the street.





Hemenway School, Framingham, Mass. Architects: M. A. Dyer Assoc.
AUDITORIUM. Four 28" x 52" Twin Dome® skylights dramatically focus attention on this wide stage by flooding it with evenly diffused, glare-free daylight. Shades have been installed to darken stage if necessary.

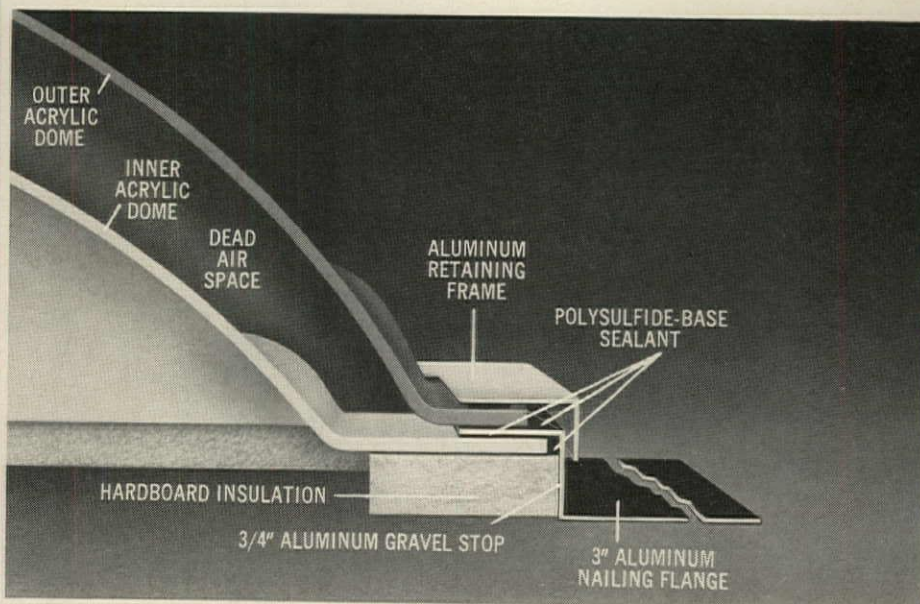


CAFETERIA. Twin Dome skylights brighten working and serving areas with natural daylight, pleasing to both students and kitchen staff. Electricity costs are reduced because lights are not on during the day.

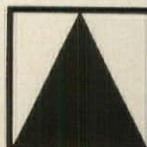
NEW TWIN DOME® SKYLIGHT INSULATES AS IT DAYLIGHTS



STOREROOM. A single Twin Dome skylight lets plenty of light into this windowless storeroom. Natural daylight opens up otherwise dark shelves, makes labels easy to read.



...GUARANTEED AIRTIGHT, WATERTIGHT, PERMANENTLY. 157 self-flashing Twin Dome® acrylic skylights bring evenly diffused, glare-free daylight into many areas of this school, including classrooms, without risk of heat gain, heat loss or condensation. The first totally proven, permanently sealed, dome-within-dome design maintains a constant 0.57 U-factor. Twin Dome skylights are guaranteed watertight and airtight. ■ A complete range of 19 self-flashing and curb-mounted sizes enables the architect to blend Twin Dome units with any roof or building design. A choice of clear, white-translucent or dense white inner and outer acrylic domes permits control of light levels. All Skydome units including the Twin Dome models are shatterproof, weatherproof and maintenance-free. The self-flashing unit can be installed in 15 minutes. ■ For full details, see Sweet's Architectural File 20a/Wa or write:

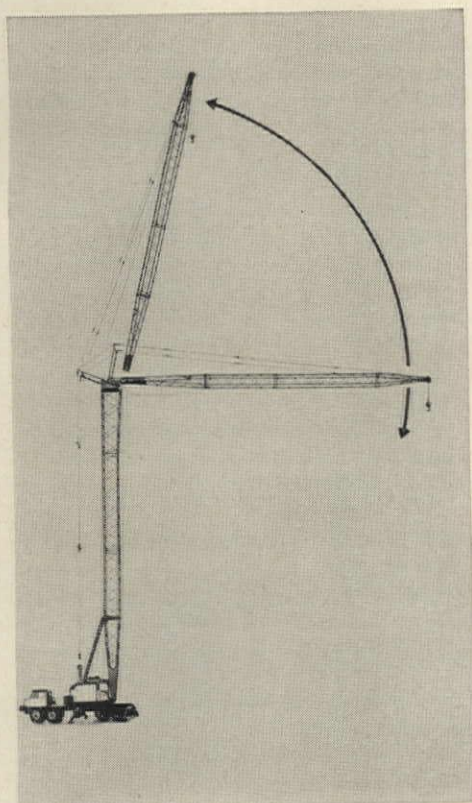


**WASCO
SKYDOME®
ACRYLIC SKYLIGHTS**

The big reach: a new tower crane (below)

Push-pull faucet (page 48)

Prefabricated shower (page 50)



LONG-ARMED CRANE

"Lifts more, higher up, farther out," is the flourish with which Thew Shovel introduces its new *Moto-Tower crane*. In support of its triple claim, Thew cites these maximum operating figures: a lifting capacity of 30,000 pounds, a top working height of 190 feet above the ground, and a horizontal reach of 97 feet, enabling this crane to work around other structures that might be in the way and to place loads a considerable distance from its base. The principle is the same as that of giant tower cranes used in Europe; the Thew crane, however, moves on rubber tires instead of tracks for greater mobility.

Height, reach, and lifting capacity are achieved by combining Thew's 50-ton *Moto-Crane*, which has a rigid tower 97 feet high, and a 90-foot boom, which is mounted on the tower. Occupying a relatively small amount of space as it gets into working position, and without any auxiliary equipment to lift it, the tower pulls itself up, secured to the turntable machinery by pins, and cables then hoist the boom atop the



tower. In effect, the two parts become one massive, self-supporting structure. The *Moto-Tower's* design reduces the clearance needed during erection, compared with conventional long crane booms, and also permits it to work closer to the building.

To move the crane from one place to another on the job, the operator drops the boom level with the tower and retracts the truck's steadying outriggers sufficiently to drive to the new position.

A boom tilt of 30 degrees from the vertical gives the crane its greatest lifting capacity, i.e., 30,000 pounds, which diminishes as the boom swings out to its maximum radius of 97 feet. At any point beyond 67 feet, the boom's capacity is a 1-yard concrete bucket.

So far, Thew reports, one complete *Moto-Tower* has been sold directly to a contractor for his own use, which cost about \$96,000 in the New York area. Other *Moto-Towers* are available from equipment rental firms and Thew distributors, some of whom both rent and sell.

Manufacturer: Thew Shovel Co., Lorain, Ohio.

RECEPTION-ROOM FURNITURE

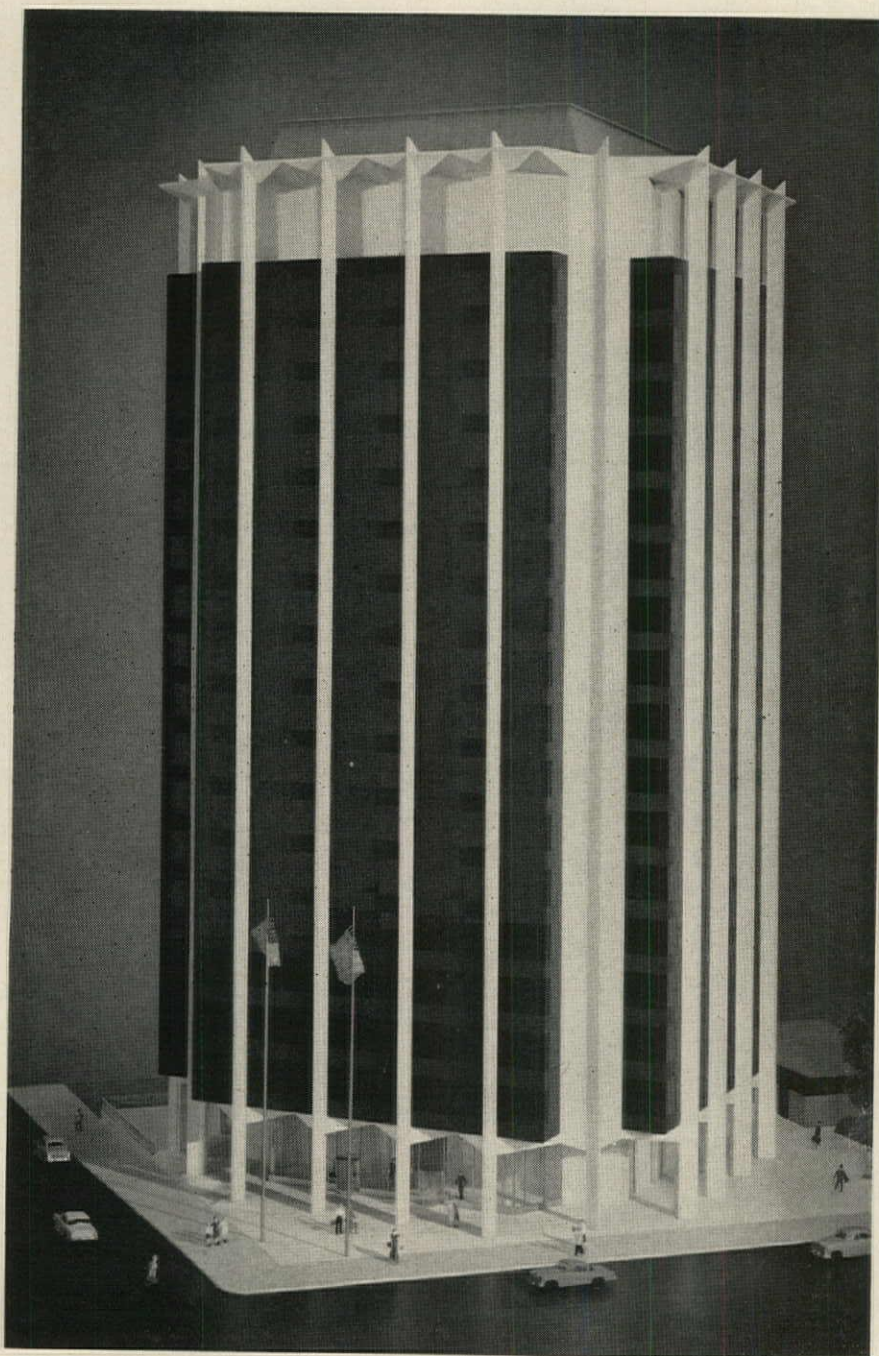
Dedicated to the idea that waiting should be as painless as possible, Lehigh's *Schematic Furniture* is designed to be neat, comfortable, and flexible, whether grouped in small office reception rooms or installed in acres of airport terminal waiting space. Ward Bennett designed the five modular pieces that make up the *Schematic* group: a chair with or without arms, a cushioned stool, a table, a planter, and a magazine rack. Common to all five are round stainless steel legs which lock in pairs by means of a double-O-shaped ring; the ring, attached to one leg, harnesses the next one to it. The double-O clamps around the legs at top and bottom, front and back, for straight-line arrangements (photo below). For curved groups, either back or front legs, not both, are harnessed. The rings can be slipped off whenever a different arrangement is called for.

Most expensive in the group is the arm-chair, which costs \$271 (list). This includes the cost of labor to cover the chair in fabric, but it does not include the fabric itself. The magazine rack and table in a walnut oil finish are \$200 and \$135, respectively. The planter, a white glass-fiber box set into stainless steel legs, is \$147. All outside base dimensions are 24¾-inch squares.

Manufacturer: Lehigh Furniture Corp., 16 E. 53rd St., New York 22.



continued on page 48



Owner: United States Gypsum Company Architect: Perkins & Will

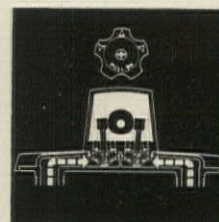
The U. S. Gypsum Company Building along with the United of America Building, the Continental Center Building, and the Demolition and Substructure for the U. S. Courthouse and Federal Office Building are but four of the recent projects here in Chicago awarded to the A. L. Jackson Company. In continuous operation since 1927, the A. L. Jackson Company has undertaken and successfully completed millions of dollars worth of construction and remodeling in all fields, in innumerable locations. The roster of clients is in itself tangible testimony of the ability of our organization. Your inquiry is invited.

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O. H. Burg, Treasurer
Archer L. Jackson, Jr., Secretary



SINGLE-CONTROL FAUCET

Push-Pull is the first single-control faucet designed, produced, and marketed by a major fixture and fittings manufacturer, according to American-Standard, which manufactures bath, shower, and lavatory fixtures in the new design.

The single control is a fluted knob. A push increases the flow of water; a turn to the right or left controls the temperature. American-Standard has patented the internal workings of the faucet, in which a cam moves the stems of two valves individually, one way for cold, another for hot. The chief advantage of the tipped valve arrangement is that it has no washers to wear out. This principle was developed for American-Standard's lever-faucet line for kitchen sinks but has not been previously used in bathrooms.

All fittings are stainless steel and brass in standard sizes and there are two spout lengths in the lavatory faucet, $3\frac{3}{4}$ and $4\frac{3}{4}$ inches. American-Standard's suggested consumer prices: combination bath and shower controls, \$27.95; either shower or bath separately, \$22.50; lavatory with aerator and pop-up drain, \$31.60.

Manufacturer: American Radiator & Standard Sanitary Corp., 40 W. 40th St., New York 18.

AUTOMATED CONCRETE BLOCK

Pratt & Whitney's completely automated system for manufacturing concrete block—from piles of aggregate to the finished product on pallets—is called *Auto-Crete*, and it bears a \$215,000 price tag. The whole system, gigantic as it is, requires the full attention of only one man, a forklift driver. The machine is so new that Pratt & Whitney will not quote exact savings, saying only that cost per block will be "significantly" lower than that of even the most efficient block machines on the market today, reducing the cost at least 1 cent per block, probably more in production.

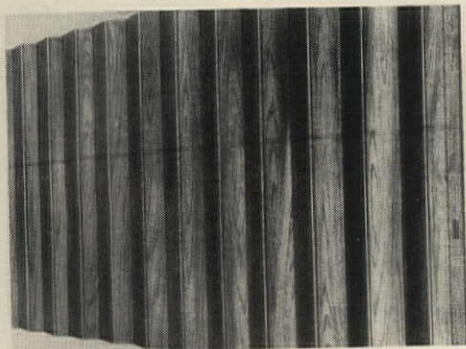
The manufacturer, however, does cite these production figures: nine 8 by 8 by 16-inch blocks every 15 seconds, or a total of 17,000 in an eight-hour day. Besides speed, *Auto-Crete* is said to turn out any size block, up to 13 inches high, 24 inches wide, and 48 inches long, in any shape, and from any aggregate.

Manufacturer: Pratt & Whitney Co., Inc., Charter Oak Blvd., West Hartford, Conn.

TRANSPARENT TYPE SHEET

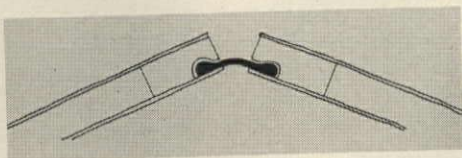
Ready-to-use lettering, benday screens and patterns, and draftsmen's symbols printed on *Mico/Type* acetate sheets with a new heat-resistant "Tak" backing are said to stick firmly through any reproduction process. Ghosting, shifting, or bubbling, the manufacturer says, are eliminated, even when sheets are run through hot-process equipment such as Ozalid, Bruning, or blueprint machines. On the other hand, sheets are easy to peel off after prints have been made, and removal does not injure the original art. The "Tak"-backed sheets cost \$1 each.

Manufacturer: Mico/Type, Inc., 6551 Sunset Blvd., Los Angeles 28.



LIGHTWEIGHT WOOD PARTITION

A folding wood partition just put on the market by New Castle Products weighs a mere 2 pounds per square foot, so light that even very large spaces, such as hotel ballrooms, can be divided quickly by one person. The key to *Woodmaster 1200's* lightness is its hollow-core construction: three-ply hardwood faces glued to either side of hardwood splines. Connecting the panels, which are 12 inches wide, are flexible vinyl strips locked into each panel edge (see drawing). The



partition hangs from a concealed overhead track without any additional track on the floor. Four trolley wheels with nylon tires steer the first panel of the partition along the track; for the rest, two wheels mounted on alternate panels are enough. A latch and knob are standard equipment.

Woodmaster 600, introduced last year, is a smaller, narrow-paneled forerunner of the 1200. Like the larger version, it is available in four veneers, Philippine mahogany, birch, oak, and walnut.

The 1200 fills openings up to 50 feet, 8 inches wide and 16 feet high; the 600 fits openings up to 30 feet, 3 inches wide and 12 feet high. Horizontal lines above the half-way mark on the 1200 partition shown are

continued on page 50

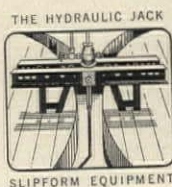
slipformed core design

advances occupancy date by months

SERVICE CORE POURED IN DAYS. ELEVATORS THEN INSTALLED AND USED FOR VERTICAL TRANSPORTATION DURING CONSTRUCTION.



Project: 5740 Sheridan Road, Chicago, Ill.; General Contractor: Gutnayer & Associates; Structural Engineer: Frank J. Kornacker



The T-shaped residence shown here is one of a number of new reinforced concrete structures time-tabled for occupancy months ahead of customary schedule — thanks to a newly developed architectural plan which is well illustrated by this job. □ With a 'Concretor' hydraulic jacking system raising forms in unison, the 170-ft. service core was slipped in 7 days. (Continuous pouring method used here, but controlled stops can be made, if desired). □ 10 weeks thereafter the building's staircases and automatic elevators had been installed in the completed core. These were used to transport men and materials as construction progressed. The contractor estimates savings at \$50,000. □ Let us tell you more about slipform core design, perfected after a decade of slipform experience. Note Heede-Linden climbing crane used to speed materials-handling.

CONCRETOR® HYDRAULIC JACKING METHOD HEEDE-LINDEN CLIMBING CRANES

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The Wall-Mount, first cooler off the floor, on the wall!



Combination recess and cuspidor fountain



Counter-type Classroom Stainless Steel Fountain



Vitreous china two-part battery type fountain



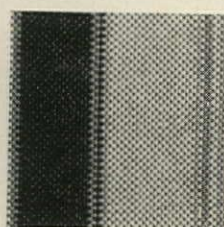
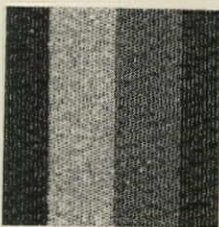
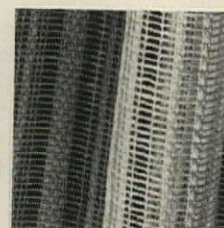
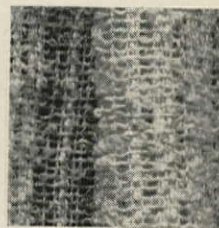
Cafeteria type

PRODUCTS

continued

V grooves made necessary by the sheet sizes of veneers. Representative costs (installed): \$3 per square foot for the 600 partition finished in mahogany, the least expensive veneer; \$3.30 for the 1200.

Manufacturer: New Castle Products, Inc., Box 353, New Castle, Ind.



DESIGNER FABRICS

These strips from the *Designer's Collection* by Boris Kroll illustrate some of many new textures specifically designed for offices, theaters, airports, and other rooms where furniture has to survive heavy wear. The top strips are drapery fabrics of linen and cotton, the bottom strips, upholstery fabrics, are wool mixed with rayon and a dash of cotton.

There are 300 upholstery and 36 drapery fabrics in the collection, many of them mixtures of natural and man-made fibers chosen for long wear. The line is geared to the day-in, day-out demands of ordinary use, and to withstand sun, careless maintenance, abrasion, and spotting. Many of the fabrics have been treated with stain- and water-resistant compounds, and all of the upholstery fabrics have acrylic backing to make tailoring easier and crisper.

Prices in the Designer's Collection depend on the kind of fibers and the complexity of the weave. The upholstery fabrics, which are 54 inches wide, range from about \$9 to \$16 a yard, and the drapery fabrics from about \$3 to \$7 for a yard 53 inches wide.

Manufacturer: Boris Kroll Fabrics, Inc., 220 E. 51st St., New York 22.

SANDWICH-PANEL SHOWER

The *Wonderwall Commander*, a modular shower for dormitories, clubs, and other institutions, is enclosed by sandwich-panel walls of steel bonded to a polystyrene core. The rest of the unit consists of a metal header over the open side and a precast terrazzo floor. Because the panels are factory finished and calked, the units are faster and easier to install than conventional slab-wall showers, the manufacturer claims.

The wall panels are formed with corners which are slightly rounded on the inside. Fabricating the panels in one piece eliminates joints at the corners, where germs and dirt might collect, and moves the joint to the side instead. These seams are double aluminum extrusions assembled on the job. Two other models have double openings, rather than the standard front entrance: front-and-back and side-and-front. Photo shows shower behind dressing enclosure.

All three models are the same size: base dimensions, 36 by 36 inches; height, 82 inches. The steel walls may be finished in synthetic enamel, stainless steel, or a combination of the two, with the stainless inside. Cost: baked enamel, \$310; stainless, \$715; stainless inside, enamel outside, \$485.

Manufacturer: Fiat Metal Manufacturing Co., Inc., Michael Ct., Plainview, N. Y.

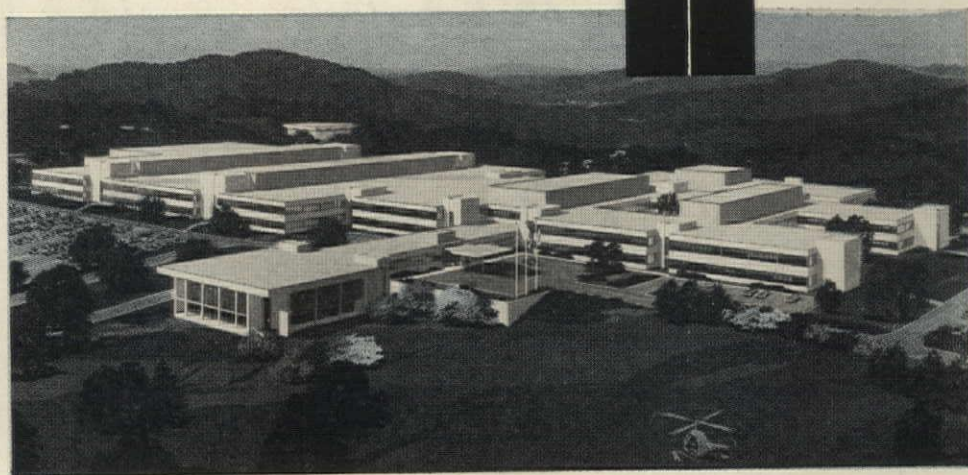


PREVIEWS

A potential revolution in outdoor lighting—and possibly industrial lighting as well—is predicted by General Electric, which has developed a metallic vapor lamp more efficient and truer in color than today's mercury lamps. Although not expected to be in production for at least a year, laboratory models of the new lamp are said to be nearly five times as efficient and just as white as conventional incandescent lamps, and twice as efficient as standard mercury lamps. One difference is that small amounts of sodium and thallium are used.

The Gas Industry Pavilion for the Century 21 World's Fair in Seattle is the first actual building to use the high-bond mortar under development for several years by Structural Clay Products Research Foundation and Dow Chemical Co. *Sarabond*, now beyond the laboratory stage and well into field testing, will enable the pavilion to use walls of 4-inch brick rather than the 8-inch brick originally specified. END

The doors will swing on McKinney Moderne Hinges at the new Space Technology Center Valley Forge, Pennsylvania



McKinney Moderne hinges were selected for the new General Electric Space Technology Center now nearing completion at Valley Forge, Pennsylvania, because they're as modern and as handsome as the building itself. Their slim lines and the quality of stainless steel pins, stainless steel oil-impregnated bearings, plus McKinney craftsmanship provide hinges which can "take it" on high frequency doors.

On your next job go Moderne. Specify McKinney Moderne . . . choice of quality-conscious consultants.

McKINNEY

PITTSBURGH 33, PENNSYLVANIA / IN CANADA
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Project: General Electric Space
Technology Center
Valley Forge, Pennsylvania

Engineers & Designers: United Engineers &
Constructors, Inc.,
Philadelphia, Pennsylvania

Architects: Vincent G. Kling, F.A.I.A.,
Philadelphia, Pennsylvania

General Contractors: Huber, Hunt, &
Nichols, Inc.,
Indianapolis, Indiana

Hardware Supplier: Barrison & Clarke, Inc.,
Indianapolis, Indiana
Joseph Clarke, President

Hinges: 1825 pair TA3331 bronze hinges
TA3731 steel hinges
TA3350 bronze hinges



KEEPING MISSILES ON TARGET 5000 MILES DOWN RANGE

Each major launching pad at Cape Canaveral has a delicate aiming device to "instruct" rockets as to direction and elevation. Barber-Colman *Electrionic* controls automatically maintain the delicate ground-to-air temperature balance of these space-age benchmarks 24 hours a day, seven days a week. This reliable control prevents warping where a 1/1000th degree deflection could put a missile several miles off the target 5000 miles away.

Cape Canaveral

...the same reliable

The growing recognition of Barber-Colman *Electrionic* control as a highly reliable means of controlling critical mechanical and electrical systems is evidenced by its selection for use at Cape Canaveral and at Chicago's \$35-million McCormick Place. In both applications, a Barber-Colman *Electrionic* Control System was chosen over competing systems for its instantaneous response, extreme accuracy, and reliable operation.

Wherever control accuracy and dependability count, it will pay you to consider these important advantages of Barber-Colman *Electrionic* control:

1. Electric-electronic components give you split-second response and adjustment of any mechanical or electrical system or component . . . there is no time lost converting electrical to mechanical energy.
2. All power for operation comes directly from electricity already available in the building or "on site."

3. Operating and maintenance costs are low because of high component reliability and simple servicing procedures . . . any electrical maintenance man can learn to quickly spot and correct the troubles.

4. Electric-electronic sensing elements have no moving parts . . . and other control modules are engineered to minimize maintenance.

5. *Electrionic* control often costs less initially—always costs less in the long run.

6. Complete system design assistance, installation, supervision, and service are provided by the nationwide Barber-Colman organization . . . which is always as near as your telephone.

Remote control centers were originated by Barber-Colman in 1953. Today, after hundreds of proven applications, *Electrionic* control is the most logical precision method of controlling the electrical and mechanical functions of any type or size building.



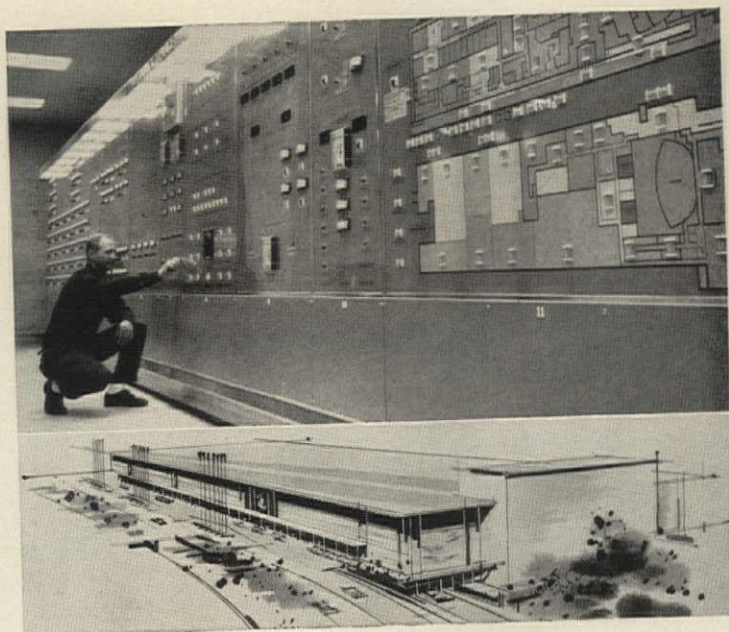
...or Chicago

temperature control "Electrionically"

Get the facts about the benefits of automatic *Electrionic* control for your new construction projects or modernization program. Call your local Barber-Colman Automatic Controls office. Or, if you prefer, write for our new *Electrionic Handbook*.

MASTERMINDING THE CLIMATE IN MCCORMICK PLACE

A Barber-Colman *Electrionic* Climate Control Center is the brain for this 36-million-cubic-foot building on Chicago's lakefront. It sets the temperatures in 145 locations . . . reports them at the speed of light . . . and corrects the slightest deviation. A single centralized control panel monitors the entire air-conditioning system—fans, dampers, pumps, motors, valves, and other equipment, including Barber-Colman high-velocity air distribution control units.



BARBER-COLMAN COMPANY

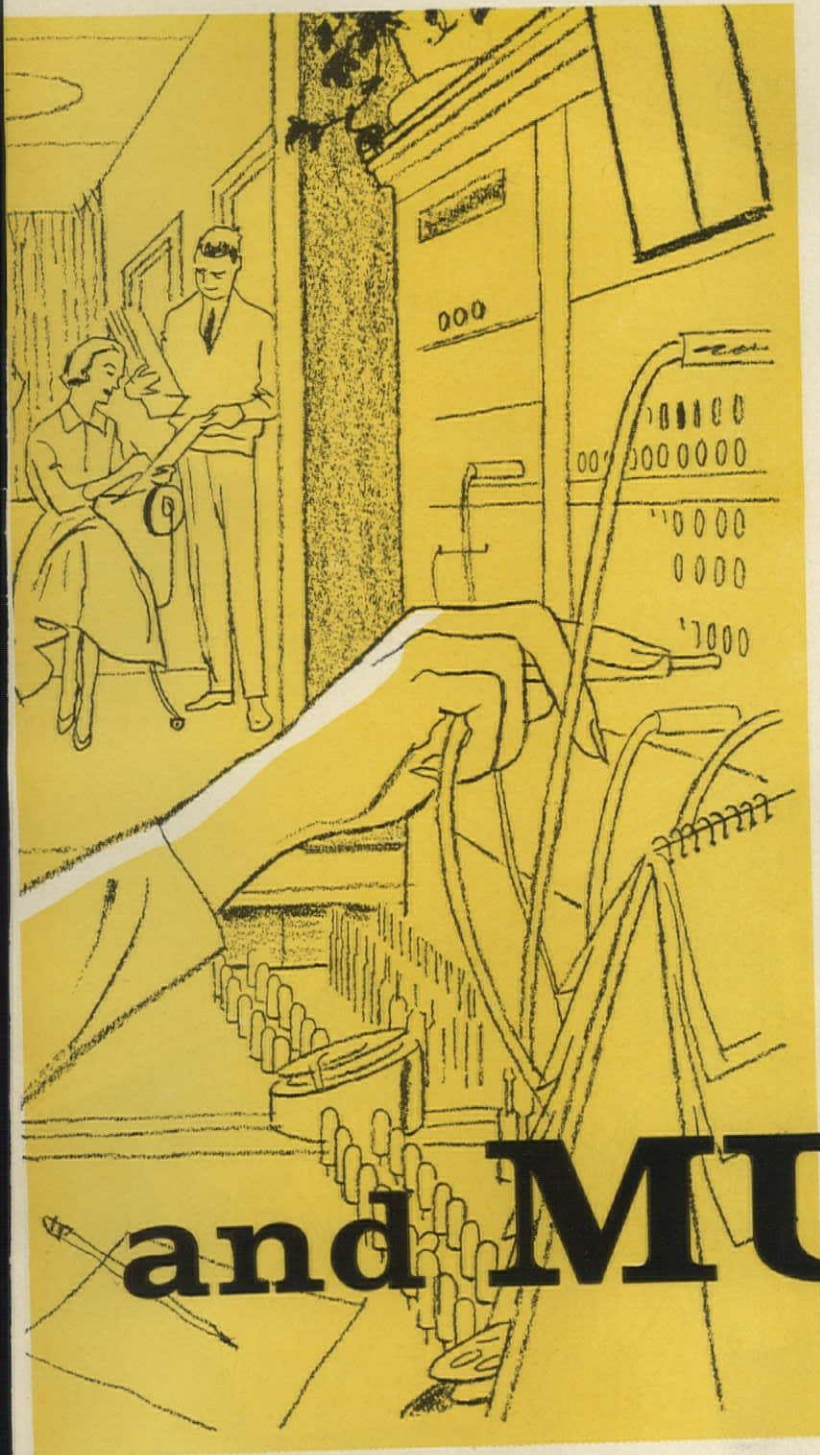
Dept. E, 1335 Rock Street, Rockford, Illinois



PERSONNEL

SPECIFICATIONS FOR WORK MUSIC BY MUZAK®

- 1. The Basic Music Source**—The music shall be instrumental only. It shall be specially recorded for the purpose for which it is to be utilized. Care shall be taken to avoid peaks and valleys of loudness and softness as well as attention-getting musical devices.
- 2. Size of Basic Music Source**—The basic music "library" shall consist of a sufficient number of specially recorded arrangements to permit a programming pattern which does not repeat any selection (except at the height of its popularity) in any eight-hour program sequence in an interval of less than nine days.
- 3. Augmenting Basic Music Source**—The basic music source shall be continually augmented with specially recorded arrangements of the latest popular tunes as well as modern treatments of standard favorites. Care shall be taken to avoid playing obsolescent arrangements and titles.
- 4. Programming, General**—Each musical selection shall be psychologically mood-rated in direct relation to following and preceding tunes, taking into account such stimuli as tempo, rhythm, instrumentation, orchestra size, changing popularity of arrangements and titles.
- 5. Programming, Timing**—The music shall be psychologically programmed by qualified work musicologists for every hour of every working day.
- 6. Programming, Integrity**—The music programmer shall be protected from intrusion of individual preferences of music style, title and artist. Request programs shall be avoided to prevent distractions and time-outs from work duty.
- 7. Silent Periods**—For optimum average worker efficiency the music shall be programmed in alternate quarter-hour periods of music and silence—each quarter-hour music group to contain a playing time not to exceed fourteen minutes.
- 8. Music Distribution**—The sound system over which the music is reproduced shall be designed specifically for balanced work music distribution. Speakers, amplifiers and other components shall be capable of continuous faithful reproduction of from 40 to 10,000 c.p.s. and shall be so installed as to provide zone control of volume levels (particularly desirable where individual



When employees become tense from boredom, frustration and fatigue, even the most efficient layouts, harmonious colors and restful lighting seem to become static and monotonous. Now Muzak® provides architects with a working tool to create a more dynamic environment, helping clients to reduce office tension, mask noise and improve employee morale and efficiency.

Don't mistake Music by Muzak with its imitators. Scientifically arranged and recorded, Muzak features "controlled dynamics", enabling it to penetrate tension-building noise in shops, clerical areas and factory expanses. It helps create a more stimulating, productive work atmosphere, builds worker morale, lessens boredom and fatigue—important sales points to your prospective clients.

and MUZAK


work sections have different ambient noise levels) and be so balanced as to avoid areas of loudness and softness. Where desired, provision shall be made for paging, or signalling, etc.

9. **Equipment Maintenance**—It shall be the responsibility of the music supplier to set standards for the maintenance of all equipment and periodic inspection and servicing thereof. The supplier shall be promptly notified of any malfunction. He shall also be notified of all contemplated movements of personnel or equipment which may require augmenting or altering the sound system.
10. **Location of Music Source Equipment**—The music source equipment (tape, record player, etc.) shall **not** be located on the subscriber's premises, nor shall he be responsible for maintenance, servicing or programming.
11. **Express Warranties**—The music supplier shall warrant that the service furnished be prepared, transmitted and faithfully reproduced under the conditions set forth above. He shall provide adequate proof that both the service and equipment he furnishes have been thoroughly job-tested under conditions and situations similar to the application to which it is to be put.
12. **Music Clearance**—All music clearance shall be taken care of by the music supplier. There shall be no further performance or mechanical license obligations.

For your convenience, Specifications for Work Music by Muzak are listed here. A.I.A. File No. 31-I-7. Sweet's Catalog File 33a/Mu. For further information contact your local franchised Muzak distributor, or Muzak headquarters.

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PRODUCTS	SIZES & EDGE DETAILS	TIME RATINGS	FLOOR & CEILING ASSEMBLIES
Natural Fissured Plaid† Striated	12" x 12" x 3/4" Square edge. Kerfed for concealed suspension system	1 Hr.	Wood deck over wood joists
		2 Hr.*	Concrete deck over steel bar joists
	Tongue & grooved and kerfed for concealed suspension system	4 Hr.*	Concrete slab over cellular steel deck, steel beams
Tiffany‡ Random Perforated.	12" x 12" x 5/8" Beveled. Kerfed for concealed suspension system	1 Hr.	Wood deck over wood joists
		2 Hr.*	Concrete deck over steel bar joists
	Tongue & grooved and kerfed for concealed suspension system	4 Hr.*	Concrete slab over cellular steel deck, steel beams
Tiffany Panels Fashion-Fissured Panels	24" x 24" x 5/8" and 24" x 48" x 5/8" Trimmed edge for exposed suspension system	2 Hr.*	Concrete deck over steel bar joists

*Includes penetrations (recessed light fixtures and air diffusers)

† U.S. Pat. No. D 191,744

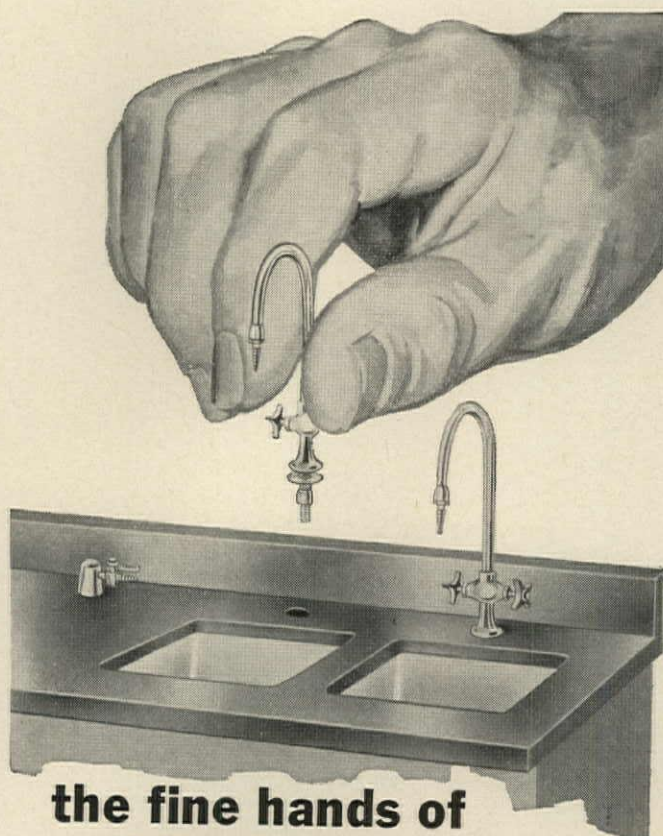
‡ U.S. Pat. No. D 191,203

*Also available in non-rated incombustible panels.

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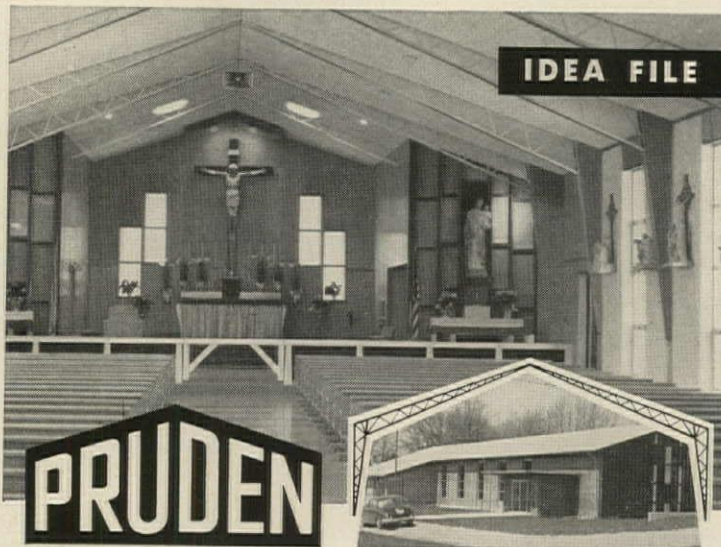
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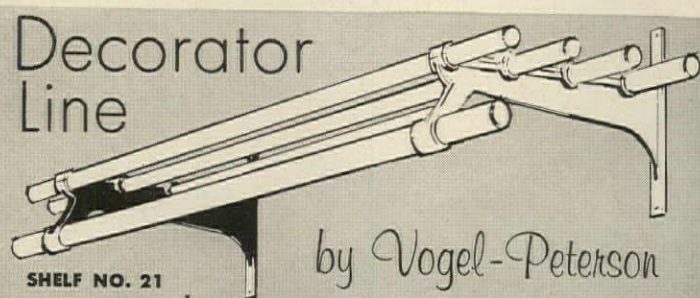
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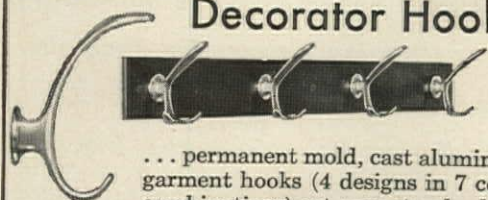
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Aluminum Hat and Coat Racks.**

Closed end, aluminum tubing—clamped rigidly in cast aluminum brackets that are adjustable to any centers. Make single or tiered wall racks of any length or capacity. Choice of modern anodized finishes and combinations, and a complete system of matching units for efficient use of any space.

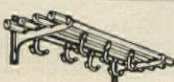
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Write for Catalog Sheets on Office Valet, Checker and Decorator Wardrobe equipment and Decorator Hook color card. DL-48

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SHELF NO. 31



SHELF NO. 11



SHELF NO. 51

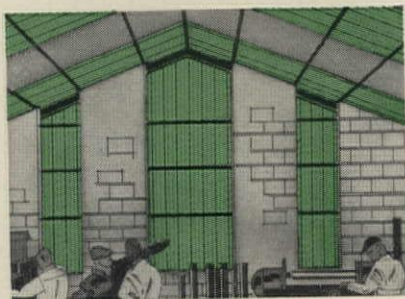


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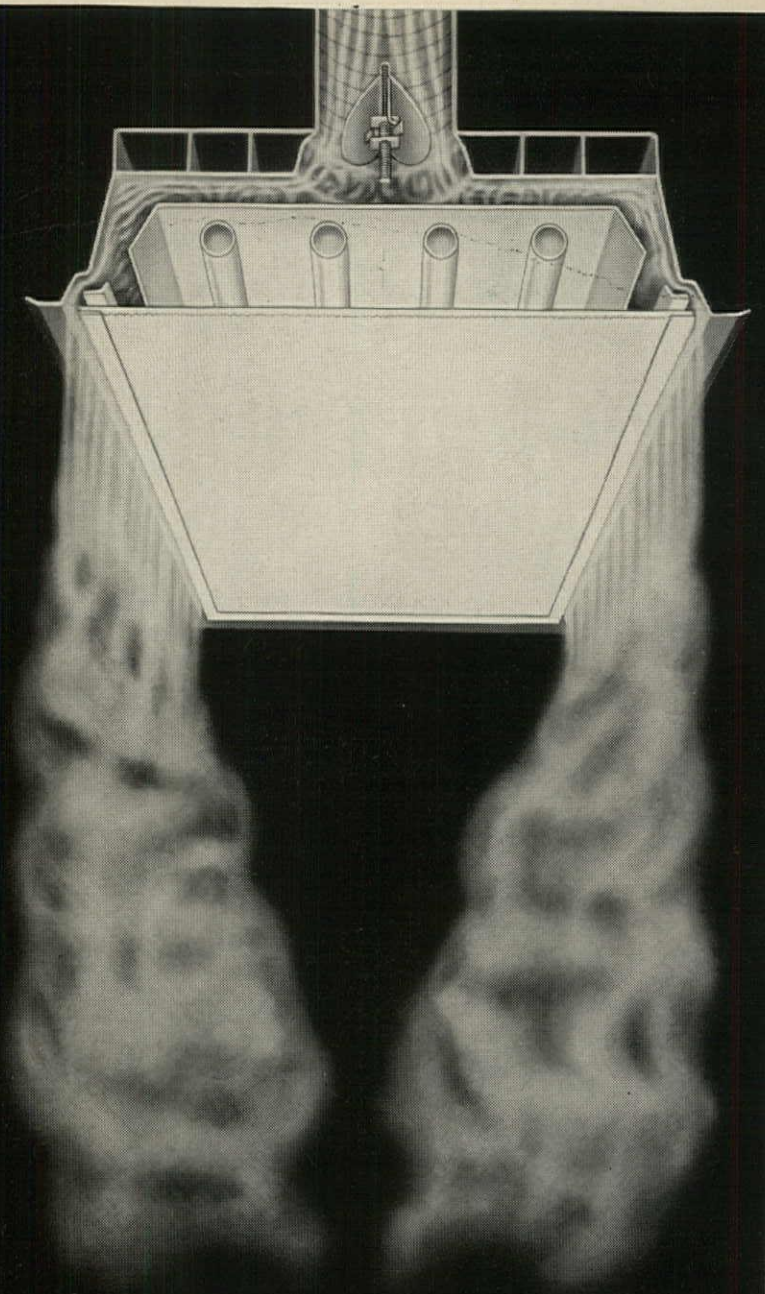
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MULTI-VENT[®] **IS THE** **TRUE** **COMBINATION** **LIGHT AND** **AIR SYSTEM**



THE MULTI-VENT IDEA WAS ORIGINATED AND DEVELOPED BY:

THE PYLE-NATIONAL COMPANY, 1334 N. KOSTNER AVE., CHICAGO 51, ILL.



When an exciting new idea comes along—an idea that has every indication of obsoleting many long-cherished concepts and a good many long-established products—certain things always happen. One of the most predictable is that as out-flanked and out-engineered manufacturers rush to climb on the bandwagon, some strange and confusing statements will be made.

Certainly the idea of combining lighting and air diffusing equipment in one fixture is exciting. Architects and designers throughout the country have enthusiastically recognized the advantages offered by a combination: reduced ceiling clutter . . . increased flexibility in partitioning.

But . . . a true combination is much more than just an air diffuser and a lighting fixture occupying the same cubical space. In a true combination the air diffuser and the lighting fixture work together to augment and improve both functions. The result: far greater lighting efficiency . . . vastly improved air diffusion.

So, let's examine some facts:

There is just one true combination . . . MULTI-VENT!

There are a number of other "combinations" where troffer and diffuser occupy the same space—none where they work together!

Only the MULTI-VENT principle assures greater lighting efficiency.

Multi-vent is the only system where the troffers are designed to draw off objectionable lamp heat. This means optimum operating temperatures . . . which in turn assures true lamp color and as much as 20% more light output. In return troffers there's the added advantage of removing the warmer unmixed ceiling zone air plus a minimum of 50% of the lamp heat before it can enter the conditioned space.

MULTI-VENT means far and away the lowest total cost.

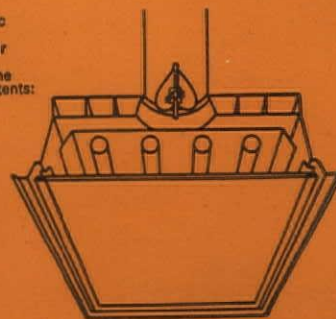
Here's why: The union-approved installation procedure is simpler and faster because there are fewer parts. Maintenance is kept at a minimum because straight-down low-velocity diffusion prevents ceiling or wall smudging—reduces cleaning and decorating costs. Operating costs are lower because just as excessive heat affects lamp performance, it increases room loads. By removing the heat with the return air troffers, duct sizes and fan sizes are reduced.

A product or an idea is as good as the company it keeps.

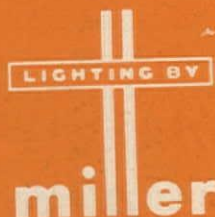
Three of the world's leading manufacturers of lighting equipment—Columbia Lighting, The Miller Company and Sylvania Electric Products—have adopted the MULTI-VENT principle, employ it in their own individually designed fixtures . . . back it with their long-established reputations!

The scientific design of Multi-Vent air diffusers is covered by the following patents:

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2,775,927
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RE. 24,637
CANADA
503,193
572,565
575,997
590,184
609,754



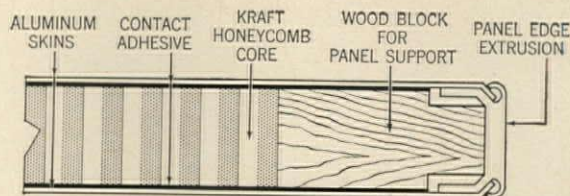
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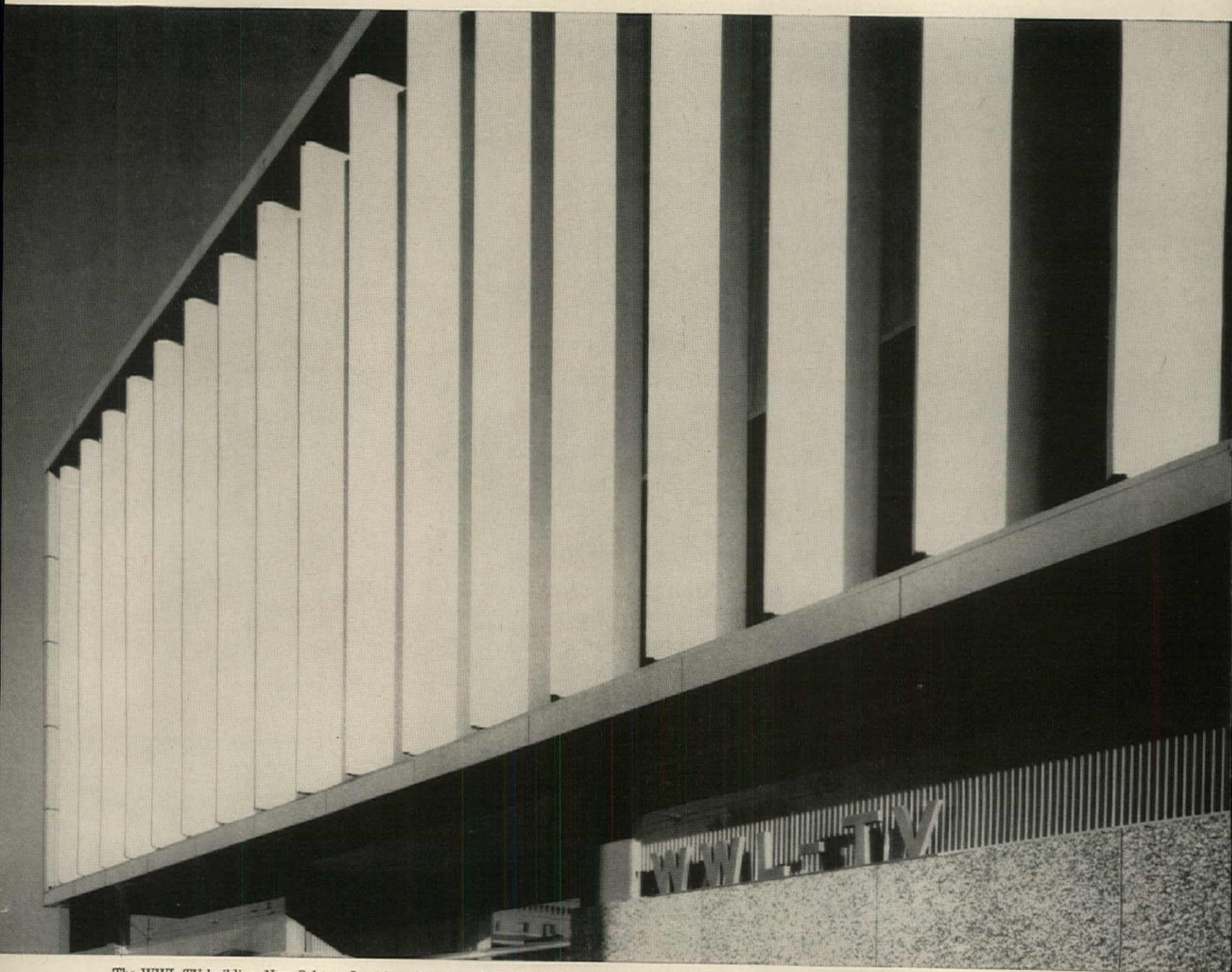
COLUMBIA LIGHTING, SPOKANE, WASH.

THE MILLER COMPANY, MERIDEN, CONN.

SYLVANIA ELECTRIC PRODUCTS, WHEELING, W. VA.



Laminated panels give practical beauty to this modern building



The WWL-TV building, New Orleans, Louisiana. Panels made by Panelfab Products, Inc., of North Miami, Florida, for Superior Solar Shade Company, Hialeah, Florida.

Lightweight laminated panels of anodized aluminum make the louvered facade of this television station both practical and attractive. The louvers control the amount of sunlight that enters the building and give it an unusually modern look.

Louvers are made with a core of kraft honeycomb, bonded on both sides to skins

of anodized aluminum. An Armstrong contact adhesive bonds the core to the skin material to form a strong and rigid panel.

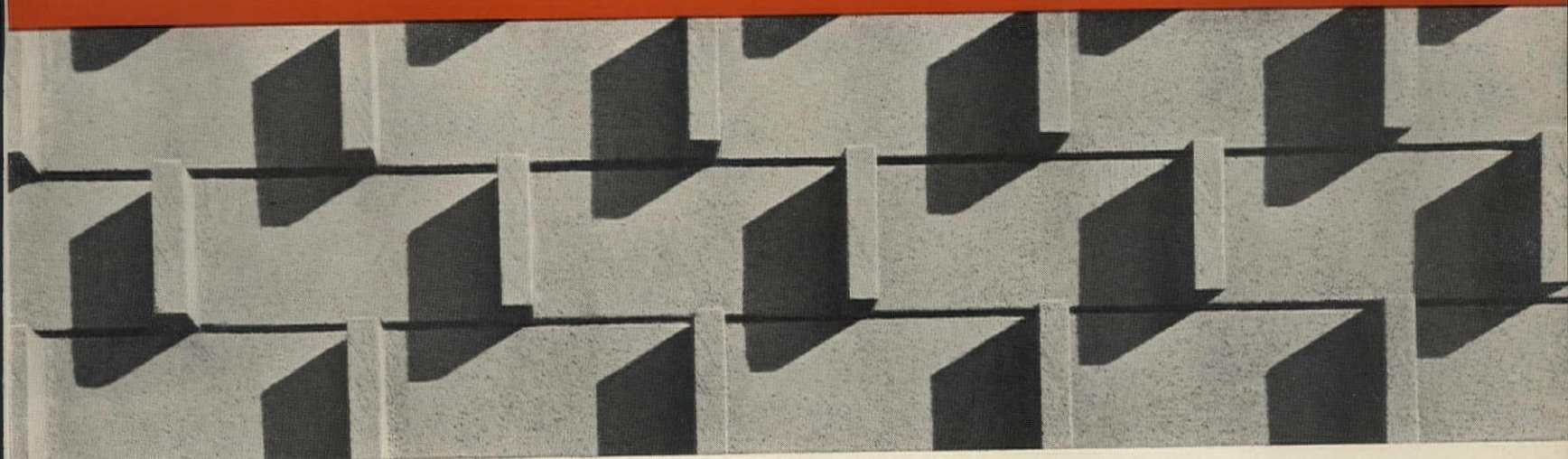
Armstrong contact adhesives have a high resistance to static load and heat. They have excellent weathering and aging properties. They provide a superior bond that eliminates many of the problems

formerly associated with laminated panel construction.

Armstrong contact adhesives are used in the manufacture of a wide variety of laminated panels. For further information on contact adhesives for panel construction, write Armstrong Cork Company, 8005 Drake Street, Lancaster, Pa.

Armstrong ADHESIVES

Great new things are shaping up in concrete block



Conventional masonry goes original. Imaginative use of standard concrete masonry units leads to rich "custom" effects of texture and pattern at low cost. Here, standard 8x8x16 blocks are laid in running bond, with 2x8x12 slab block projecting 3" at each joint. (The slab block also projects 1" at back to provide a design for the interior wall surface.) Vertical joints are filled flush; horizontal joints are tooled to a depth of $\frac{3}{8}$ ". Ask your local block manufacturer. ■ To lay up concrete block in new, imaginative effects, ATLAS MASONRY CEMENT provides the right mortar. It gives weather-tight joints that are uniform in color. Complies with ASTM and Federal Specifications. For information on masonry cement, write Universal Atlas, 100 Park Avenue, New York 17, N. Y.



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M-88

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New woodfiber acoustical tile that

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FIRST TIME EVER! INCOMBUSTIBLE TILE SAFETY AT WOODFIBER TILE PRICES!

Underwriters' Laboratories, Inc., inspects and labels Simpson PCP ceiling tiles. Like incombustible mineral tiles, PCP has a flame spread rating of less than 25.

PCP ceiling installations are now replacing mineral tiles that cost up to 50% more. Simpson PCP costs only a few cents more than ordinary woodfiber acoustical tile.

Pyro-Chem Protection is an exclusive Simpson process. Not just a surface treatment, every fiber throughout the tile is impregnated with special PCP fire-proofing chemicals.

Simpson PCP acoustical tiles are not only safe and economical, they are acoustically efficient; NRC ratings up to 70. Room-to-room attenuation factors average 37.6-41.5 db. Available in 4 beautiful Forestone® sculptured textures and 2 perforated designs.

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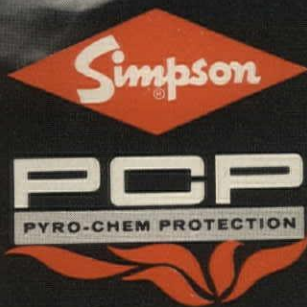
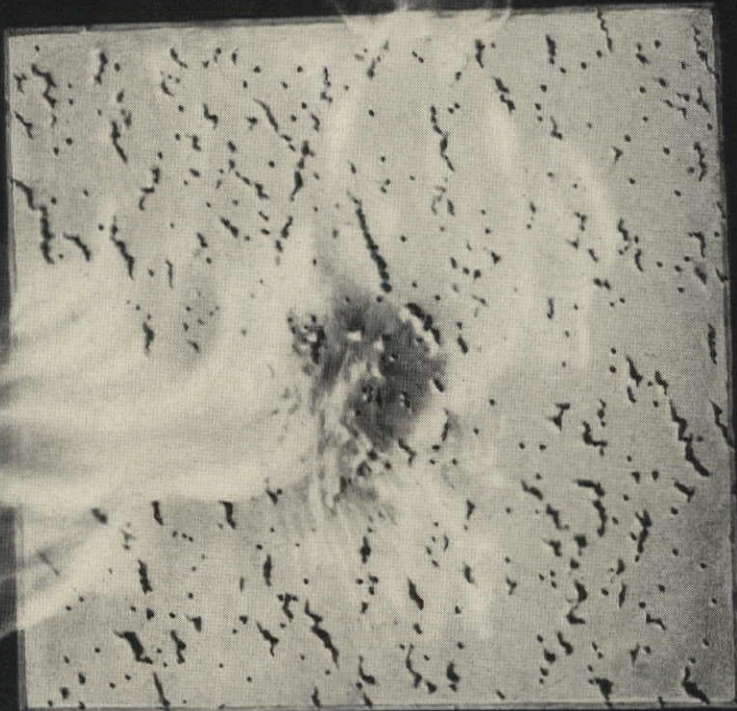
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® U.S. PAT. NO. 2,791,289



SERIES 3000

BUILDING: *Meigs Field Terminal, Chicago, Illinois*
ARCHITECT: *Consoer & Morgan*
CONTRACTOR: *Mercury Builders, Inc.*

More than 700 buildings all over the United States have Kawneer's 3000 Unit Wall. It is an excellent low-rise system. The weather-tightness of each proves that the principle of unit construction—with internal drainage—is successful in practice. Kawneer-trained wall and window contractors contribute to this successful performance by correctly installing the system.

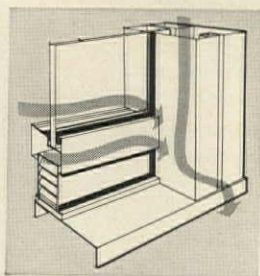


SERIES 4100

BUILDING: *Gibraltar Savings & Loan*
ARCHITECT: *Victor Gruen Associates*
CONTRACTOR: *William Simpson Construction Company*

This high-rise Unit System is being specified more and more by architects who had previously used window wall systems on high-rise construction. The reasons are simple: 4100 has the strength to weather the severe conditions that high-rise buildings are subjected to, and its internal drainage system assures weather-tightness. Installation by Kawneer Wall Systems Contractors or Kawneer's Contract Dept., itself, depending on the size and complexity of the job.

Kawneer unit wall systems with I.D.* are performance proved



Unit Wall Systems with internal drainage were pioneered and developed by Kawneer Company. The original concept (Series 3000 was the first to utilize I.D.*) has proved so sound that no basic changes have been made since the origination of the idea seven years ago. Kawneer Unit Systems successfully solve the problems in metal curtain wall construction; thermal movement, stress and leakage.

When you design your next building, assure the integrity of the walls with a suitable Kawneer Unit System. For complete information call your Kawneer representative or write:

**INTERNAL DRAINAGE SYSTEMS in Kawneer Unit Walls collect any water that gets past the seals and into the walls, drains it down the verticals and out. Water does not get through the walls and into the building.*



KAWNEER CO., Niles, Mich., Richmond, Calif. • KAWNEER CO., CANADA, LTD., Toronto, Canada

RHYTHM

"...We have frequently mixed several bright colors in porcelain enamel to create the kind of excitement that is found in jazz music.

"The pattern shown here is strongly vertical with deeply projecting vertical mullions ...spaced at half-module width...and the staggered vertical pattern of windows and spandrels, like clarinet obligatos shooting up into the sky. We have divided the spandrels into fields of grey and red that tend to destroy the monotony of identical windows and floors."*

Black mullions and multi-colored spandrels become practical with the true, permanent and versatile colors of quality porcelain enamel. The infinite variety of colors, patterns and textures now available in porcelain enamel gives the architect the materials he needs to create a new—and more expressive—curtain-wall architecture.

*From "Expression in Curtain Wall Design" by Peter Blake, A. I. A.

**PORCELAIN ENAMEL
INSTITUTE** 1145 19TH STREET, N. W.
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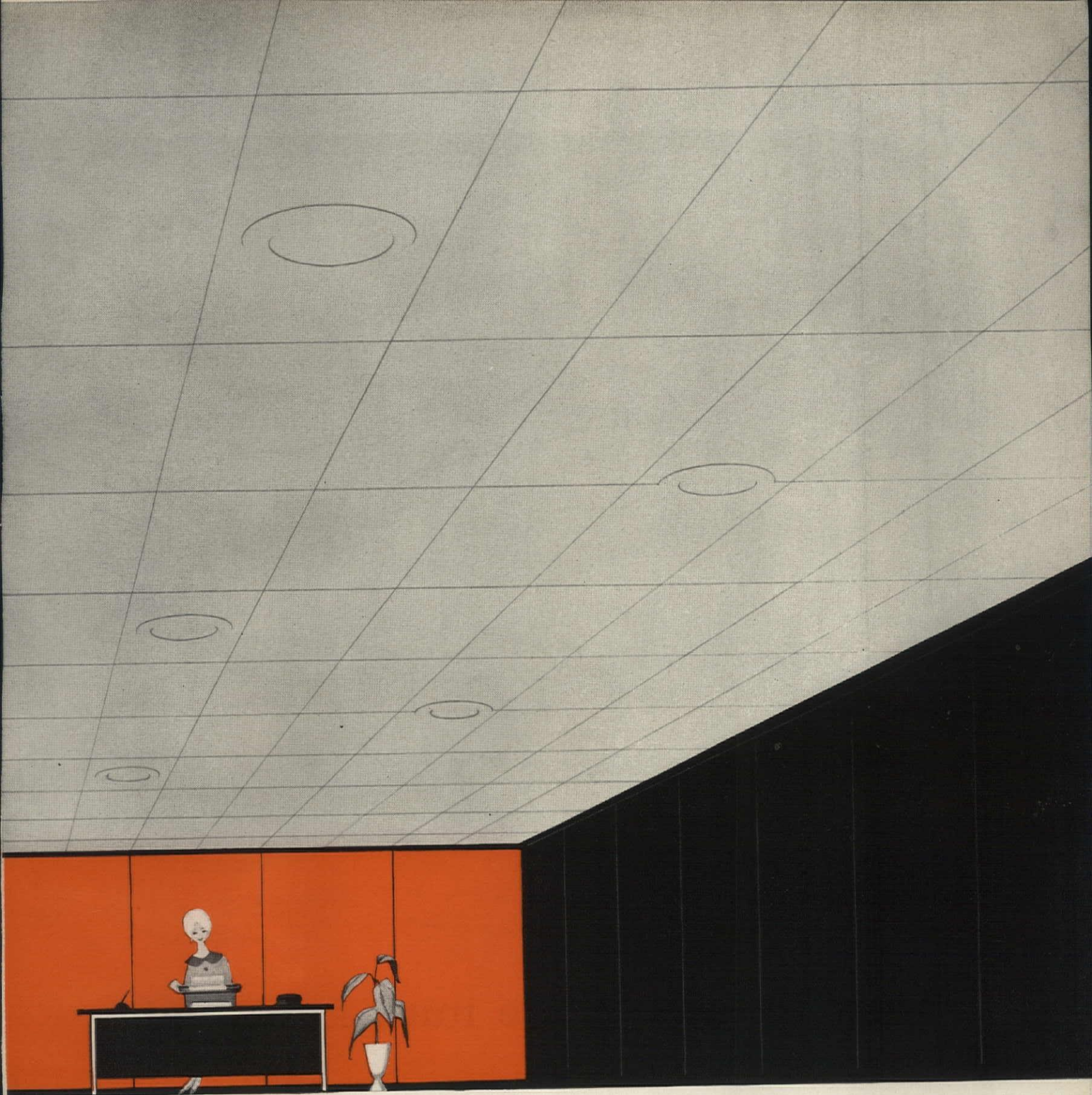


New from Hauserman
Criterion
a series of incombustible ceiling products
...an idea ...a pledge

THE PRODUCTS: In the Hauserman Criterion line you can choose exactly the right ceiling material for the job—fiber glass, asbestos fiber, mineral wool fiber, perlite, metal pan... Hauserman offers them all.

THE IDEA: Hauserman single contract responsibility for every detail of your job from initial order to completion, eliminates expensive delays and scheduling headaches, assures an integrated installation by Hauserman's payroll employees.

THE PLEDGE: Fifty years of Hauserman experience,



skills and reputation to guarantee a completely satisfactory installation. A Hausermanaged approach that sees Criterion not as a simple series of products but as a total ceiling concept.

Whether you're interested in Criterion ceilings; Hauserman movable walls; or an integrated, single-source package of both, there's no "or equal" when you specify Hauserman.

And, now both acoustical ceilings and movable walls can be included in Hauserman's unique capital-extending leasing plan.

THE E. F. HAUSERMAN COMPANY
7587 Grant Avenue, Cleveland 5, Ohio

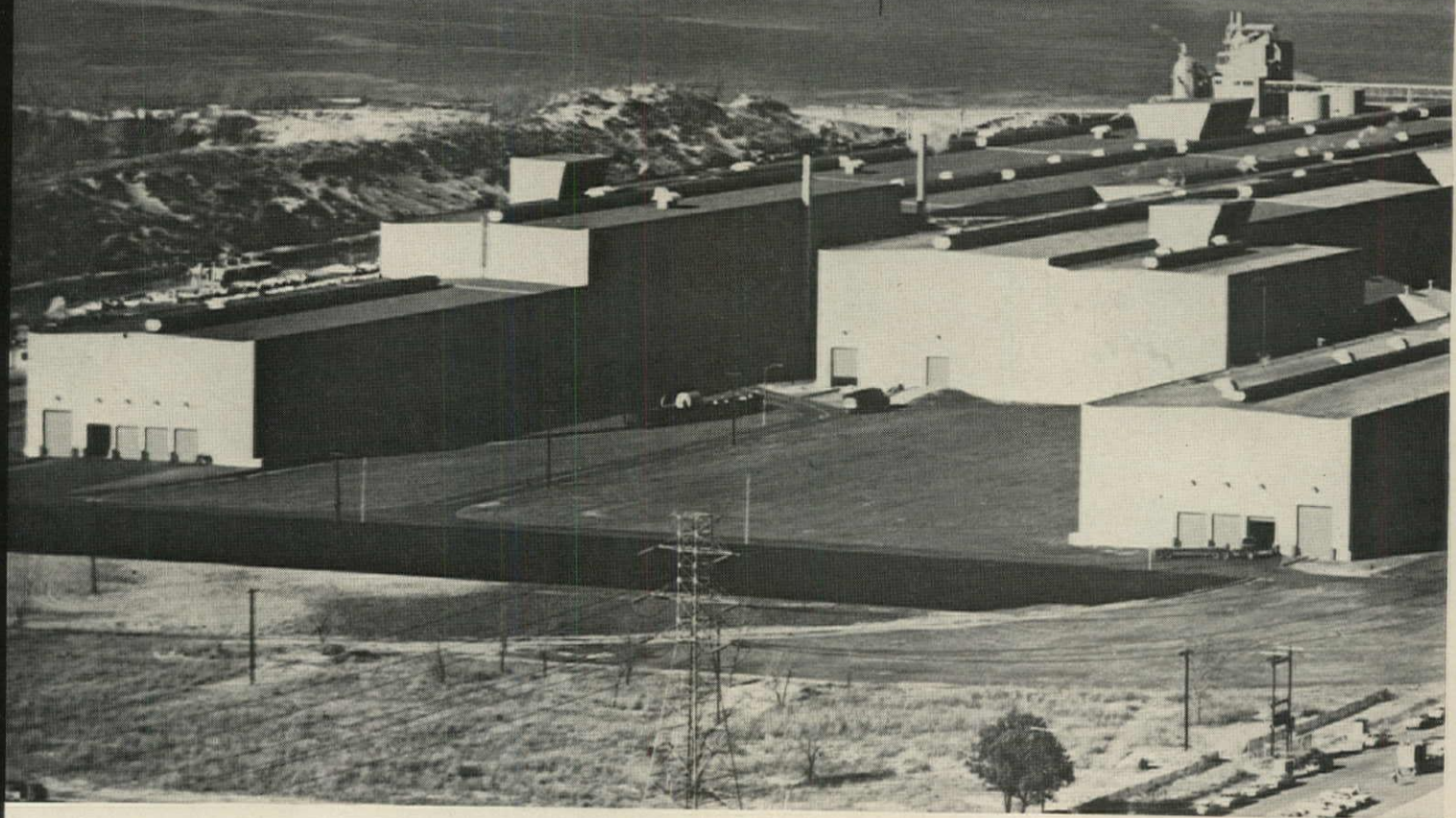
- ☐ Please send me your booklet on Criterion ceiling systems.
- ☐ Please send information on Hauserman's Leasing Plan.
- ☐ Please include full information on Hauserman Movable Walls.

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Firm _____
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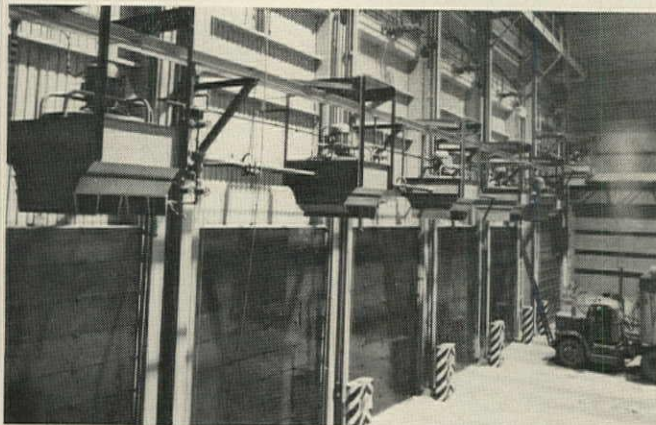


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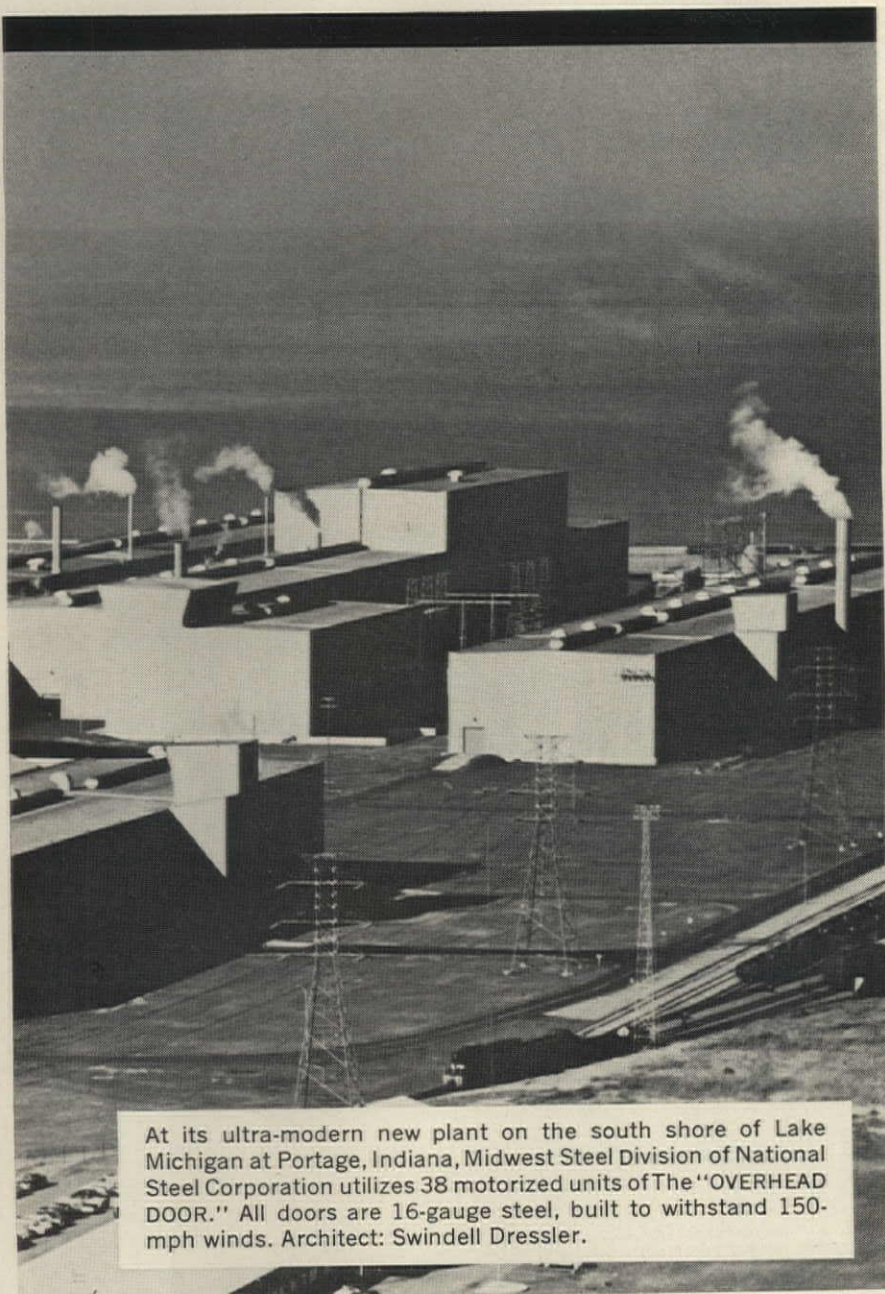
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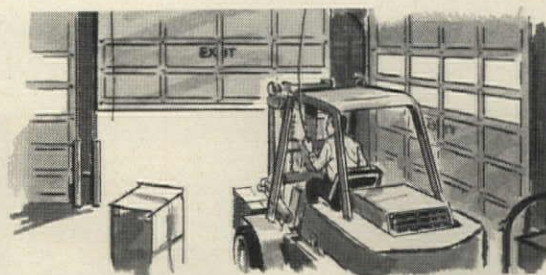
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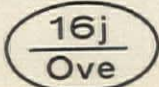
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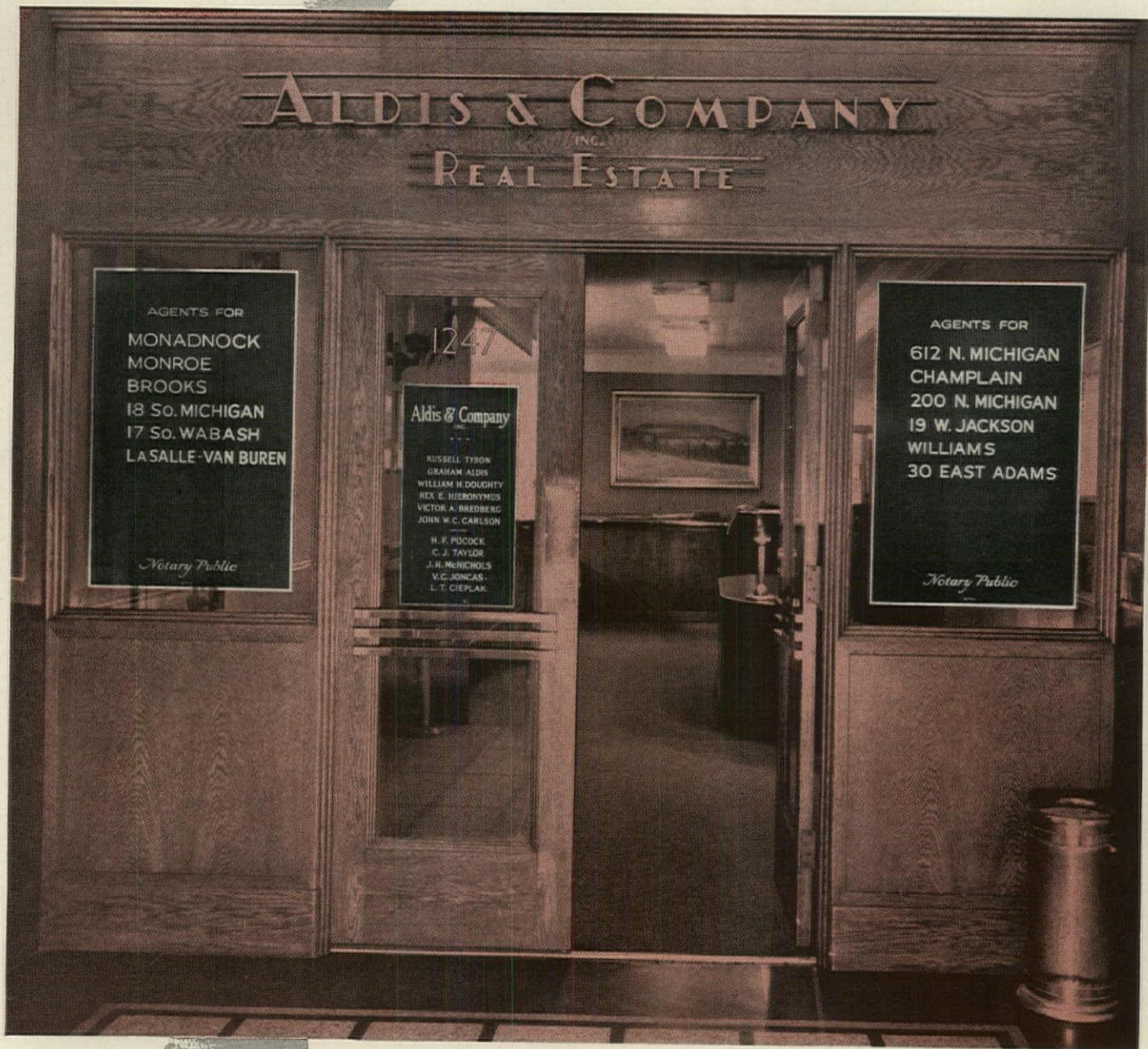
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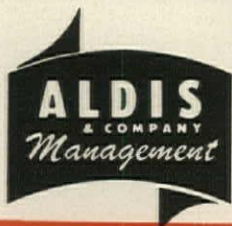


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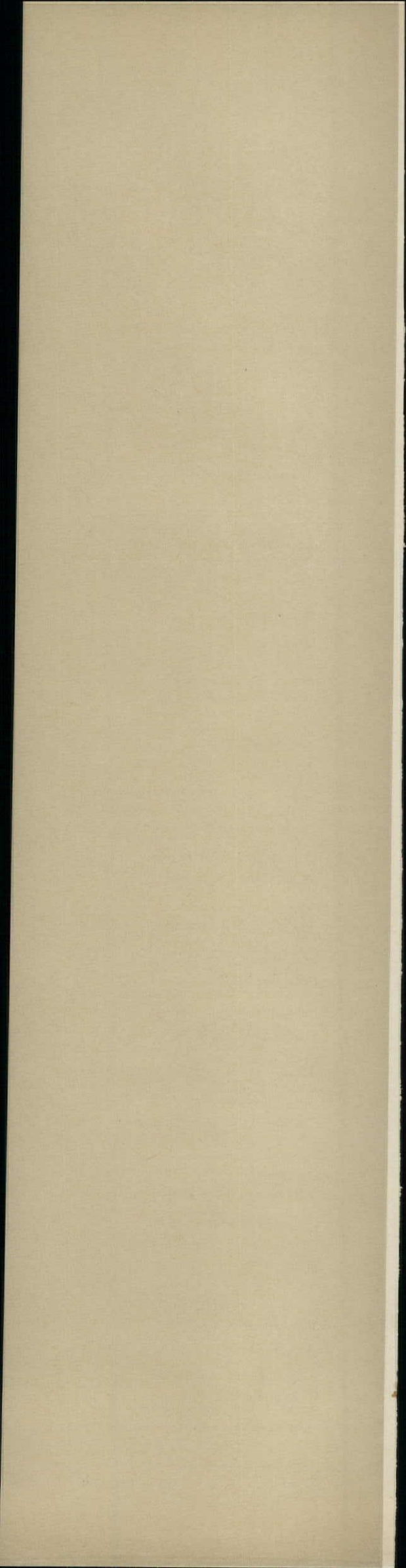
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For the first time since it started publication 70 years ago, FORUM this month devotes a full issue to the story of one city:

CHICAGO

Here is where it all began. Here, in Chicago, the skyscraper received its first major workout; here, too, a bold modern plan for a U.S. city of great parks and great avenues was first drawn up and then translated into dramatic reality; and here, in Chicago, modern American building technology was given some of its most powerful boosts: the mechanical elevator, the steel frame, the glass-and-metal wall.

All this began almost a century ago, shortly after Mrs. O'Leary's cow kicked over that lantern.

What happened, more or less as a result of that bit of carelessness, is now architectural history; and the names of those who rebuilt Chicago after the Great Fire are high among the names of those who made architecture modern: Jenney, Sullivan, Burnham, Root, Wright—and all the rest. As a strong, single-minded group, these men are probably our most important source of architectural inspiration.

This is so, in part, because of the special climate of this vigorous, violent, and exhilarating city. Bismarck once said that he wished he could go to America if only to see Chicago—because “it was built by free men.” Rudyard Kipling wrote: “I have struck a city—a real city—and they call it Chicago. The other places don't count.” (And, being a *pukka sahib*, he added: “Having seen it, I urgently desire never to see it again. It is inhabited by savages.”)

Free men or savages—one thing is sure: Chicagoans have a tradition of almost boundless optimism: who, but a race of wildly irrational optimists could survive so many mistakes and bounce back with plans and solutions

COURTESY: CHICAGO HISTORICAL SOCIETY



that would stagger the imagination of ordinary men? They built a city in a swamp and continued to live there even when this meant raising the sidewalks a few feet every now and then because they were sinking into the mud. They rebuilt their city after the disastrous fire with magnificent skyscrapers even though the skyscrapers had to be anchored in soup. They accepted Burnham's daring plan (and carried it out in part) while, at the same time, ignoring such elementary problems as decent housing and decent schools. They smothered their own, great architects in the gaudy Exposition of 1893—but still gave great opportunities to cocky youngsters like Frank Lloyd Wright. They tolerated some of the worst slums in the world, and then, in one fell swoop, tore down 1,000 acres of those same slums to rebuild from scratch. And in doing some of this rebuilding, Chicagoans are today going in for such pure science fiction as building artificial islands in their lake and squeezing concrete skyscrapers 555 feet tall out of giant squirt guns.

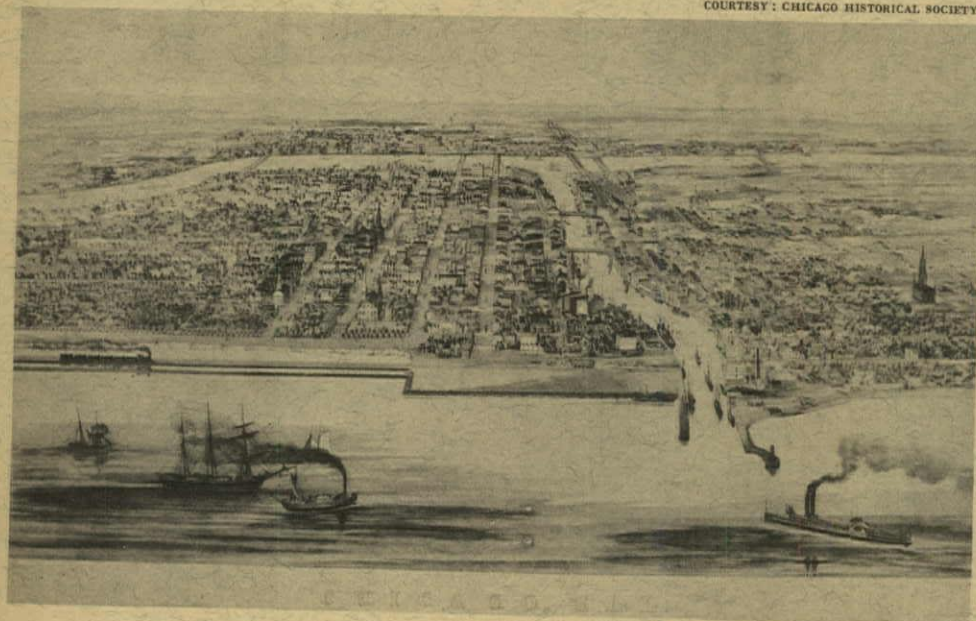
Sensible people (like the inhabitants of New York) know that these things just can't be done. But for some strange reason, Mr. Kipling's savages go right ahead and build islands, squeeze skyscrapers out of squirt guns, and tear down their city. And all this despite a long series of crooked political bosses, despite a bloodcurdling tradition in crime, and despite some of the most severe racial tensions in the U.S.

This issue of FORUM is an attempt to find out what has given Chicago this incredible bounce, and to record which way the city is bouncing today.

There is the "Second Chicago School" in architecture (the school of Mies van der Rohe and his former students). It has already changed the face of U.S. skyscraper building. And a "Third Chicago School" may, just possibly, be on its way. There is Chicago's vast urban renewal effort. It has made some big mistakes, and taught and learned some big lessons. And, finally, there is the inventiveness of Chicago's new architect-engineers. Their experiments are challenging a score of accepted notions about modern building technology.

One rainy evening in 1887, Frank Lloyd Wright, then 17 years old, arrived at Chicago's Wells Street Station. Many years later he recalled: "To know Chicago is an experience in first principles; a despair—and a great hope." Chicago is both these things today.

COURTESY: CHICAGO HISTORICAL SOCIETY



1853



MUD, PEOPLE AND POETIC LICENSE

Only the Indians knew about Lake Michigan until 1634, and they weren't telling anyone except other Indians. Then Jean Nicolet arrived, seeking a legendary People of the Sea, thought to be Asiatics. Paddling down the Mackinac Strait, Nicolet landed on the shore of the lake and found only Winnebago Indians. He seems to have shrugged the whole thing off with a minimum of disappointment. "Donning a Chinese robe and firing two pistols, then joining heartily in a banquet of 120 roast beavers, he won his host's admiration for French ways, and departed," said Chicago Writer Robert Faherty recently.

In the years to come, however, everyone else seems to have heard of Chicago, just down the shore; it became a destination for great migrating streams of people: the Irish immigrants of the 1850s, then the Scandinavian immigrants, then the Germans. When these rivers of people ran lean, new torrents began—Slavs, Russian Jews, and Poles. Following them, after the turn of the century, the southern Italians and Sicilians came pouring in.

Before Chicago, there was never another city that grew so fast. Even in the 1950s Chicago was a magnet every month for thousands of Negroes from Dixie, and also for the white hill people of the South.

Many lures have attracted the travelers. The first lure, away back when the U.S. first bought Chicago and the rest of the Louisiana Territory from the French, was the fact that this land beside Lake Michigan was just about the best portage spot from the Great Lakes to a Mississippi tributary. These were the canal-building days of the U. S., and it seemed natural that a canal would be planned here. It wasn't much of

a site that President Jefferson ordered Fort Dearborn built upon. (Mad Anthony Wayne was the lobbyist for this particular federal installation.) The garrison sang:
*Oh, we're camped on sand
Of a wild, wild land
At a place they call Chicago . . .*



But mostly it was mud and poetic license; the place was a swamp and was loaded with swamp onions, which the Indians called *chickagou*.

The first canal actually wasn't completed until 1848, but the land boom based on it began in 1833—appropriately premature. Soon it was the railroads that were doing



the real work, anyway, and the city, over its first growth, was ready for the foreign immigrants. By 1871, the city fathers decided to get rid of various plagues troubling them by reversing the flow of the Chicago River, so that their sewage would be swept away from the lake, their water source. This audacious scheme actually worked; and undeterred by carping or catastrophe (1871 fire, below), Chicagoans have been reversing the natural flow of things ever since.

Among the best-known representatives of this Chicago spirit have been the following:



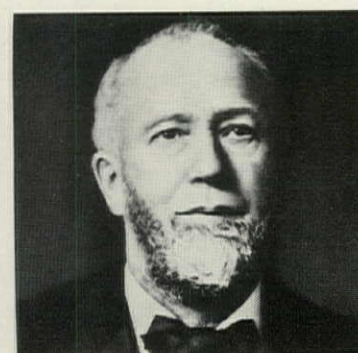




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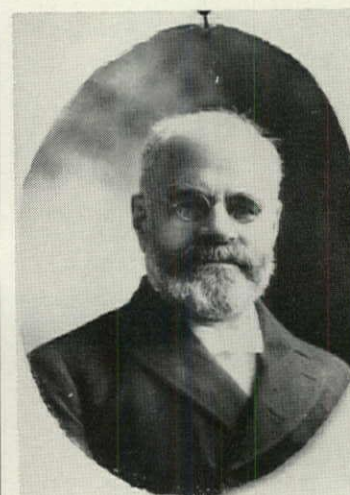
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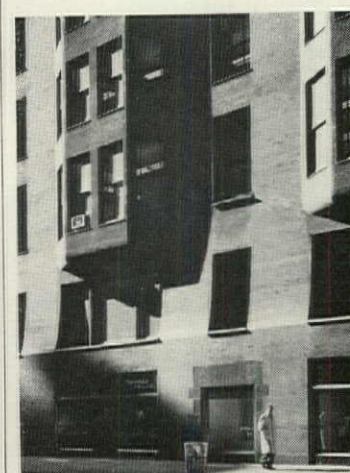
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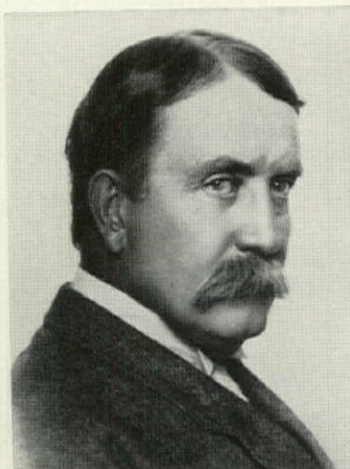
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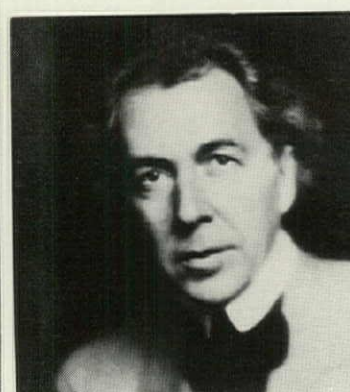
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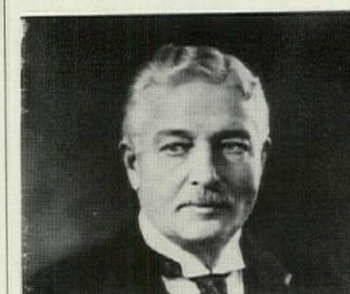
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11



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16



17



18

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Poetry
A Magazine of Verse
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JUNE 1915

I Sing of My Life Alan Sytton
The Syrian Lover in Exile—Alma Mason
After Vespers
To Rupert Brooke I-V Arthur Davidson-Picke
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The Death of Rupert Brooke—Hart to George
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Our Contemporaries—Correspondence—Notes

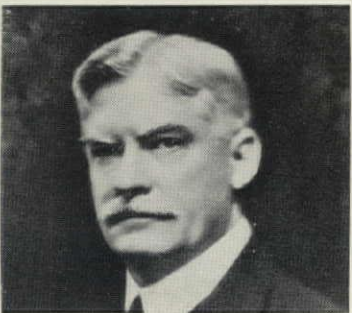
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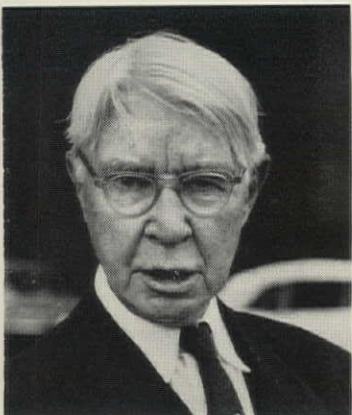
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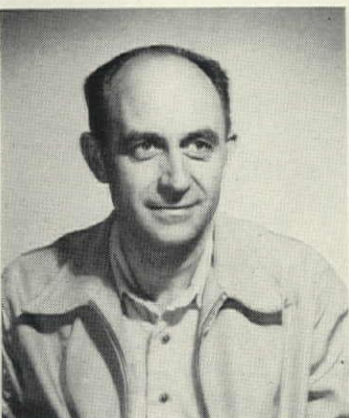
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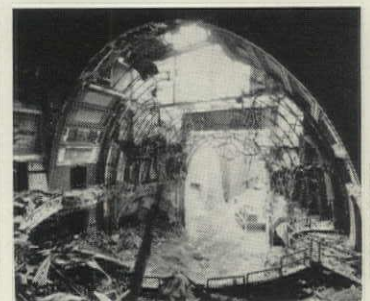
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Philip Danforth Armour (1) and an interest (2) he shared with Gustavus Franklin Swift (3); the Leiter building (4); merchant Marshall Field (5); partners Louis Henry Sullivan (6) and Dankmar Adler (7); the Monadnock Building (8); Ferris wheel—fun at the 1893 Columbian Exposition (9); master planner Daniel Hudson Burnham (10); the artist as a young man, Frank Lloyd Wright (11); Jane Addams of Hull House (12); Charles H. Wacker, real estate visionary (13); Clarence S. Darrow, humanitarian voice (14); King Joe Oliver, up from New Orleans (15); Big Jim Colosimo (16) and his heir, Alphonse Capone (17); Harriet Monroe (18) and her magazine (19); fun at the 1938 World's Fair—Sally Rand (20); Architect Ernest Robert Graham (21) whose will established the Graham Foundation; Lázló Moholy-Nagy (22); Carl Sandburg (23); Mies van der Rohe (24); Mayor Richard J. Daley (25); Dr. Enrico Fermi (26) and a very important building at the University of Chicago, Stagg Field (27), site of the first self-sustaining nuclear chain reaction, Dec. 2, 1942.

The puzzle in Chicago is the influence of past on future. Many of the people named above are gone, although it takes but little searching to find their influences still alive. In architecture, however, there is little doubt that the real time of trial for Chicago's historical past is yet to arrive in the 1960s. Will the new boom sweep aside the aging monuments as they slide deeper into economic desuetude?

Chicago has probably the strongest, best organized, most articulate proponents of architec-

tural preservation in the nation. The generator of their high resolve has been the demolition of such treasures as Architects Holabird & Roche's Tacoma, Republic, and Cable buildings, Adler & Sullivan's Walker Warehouse and Garrick Building (the interior of the wrecked theater, below, and sections rescued and used in the Second City Nightclub). Such treasures as the Leiter Building and the Monadnock still stand, but those who value them are worried about economic clouds forming overhead. The question keeps coming up: why keep them? What the preservationists answer, accurately, is that these buildings are the real souvenirs of the strangely diverse but immense energy which has represented Chicago's people—the great, the notorious, and the anonymous—to the world for more than a century.



RICHARD NICKEL

(1) Courtesy Chicago Historical Society; (2) The Bettmann Archive; (3) Kaufmann & Fabry Co.; (4) Courtesy Art Institute of Chicago; (5) Wide World; (6) Courtesy Art Institute of Chicago; (7) Courtesy Mrs. Julius E. Weil; (8) Richard Nickel; (9) From "The Century World's Fair Book" by Tudor Jenks published by The Century Co., N. Y.; (10) From "Daniel H. Burnham" by Charles Moore published by Houghton Mifflin Co.; (11) Obma Studio Photo; (12) Associated Press; (13) Courtesy Chicago Historical Society; (14) United Press; (15) Paul Edward Miller; (16) International Press; (17) Acme; (20) Acme Newspictures; (21) Chicago Architectural Photographing Co.; (22) Vories Fisher; (23) Arthur Siegel; (24) Frank Scherschel—LIFE; (25) Francis Miller—LIFE; (26) E. D. Wallis; (27) Acme.



MORTON SHAYRO



1

A CONTINUING TRADITION IN

GREAT ARCHITECTURE

"Eventually," Frank Lloyd Wright once said, "Chicago will be the most beautiful great city in the modern world." If so, one reason will be that Chicago has given some of our greatest architects their greatest opportunities.

New York has exactly one building by Louis Sullivan and one by Wright, and Washington, D.C. has no buildings by either; but Chicago contains the work of both men in great abundance. Ludwig Mies van der Rohe had a great reputation when he arrived in Chicago in 1938 from his native Germany, but he had built very little; today, the imprint of his work is all over the city. And some of the brightest of the younger architects in the U.S. are finding the atmosphere of Chicago increasingly congenial and receptive to their ideas.

The First Chicago School of Jenney, Sullivan, Burnham, and others gave the U.S. and the world some of its finest modern classics (pages 90-93). This may be news to some Chicagoans, who have recently begun to demolish those same classics with the abandon of a "torpedo" engaged in rubbing out the competition. The Second Chicago School, led by Mies van der Rohe and many of his former students, has given the U.S. and the world an architecture of persuasive clarity and beauty (pages 94-101). And now a Third Chicago School may be in the making (pages 102-106).

So, for more than 80 years, Chicago has been a proving ground for great architecture. The evidence is on the next 17 pages.



FROM: THE IDEA OF LOUIS SULLIVAN BY JOHN SZARKOWSKI.
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THE FIRST CHICAGO SCHOOL—AND THE SECOND

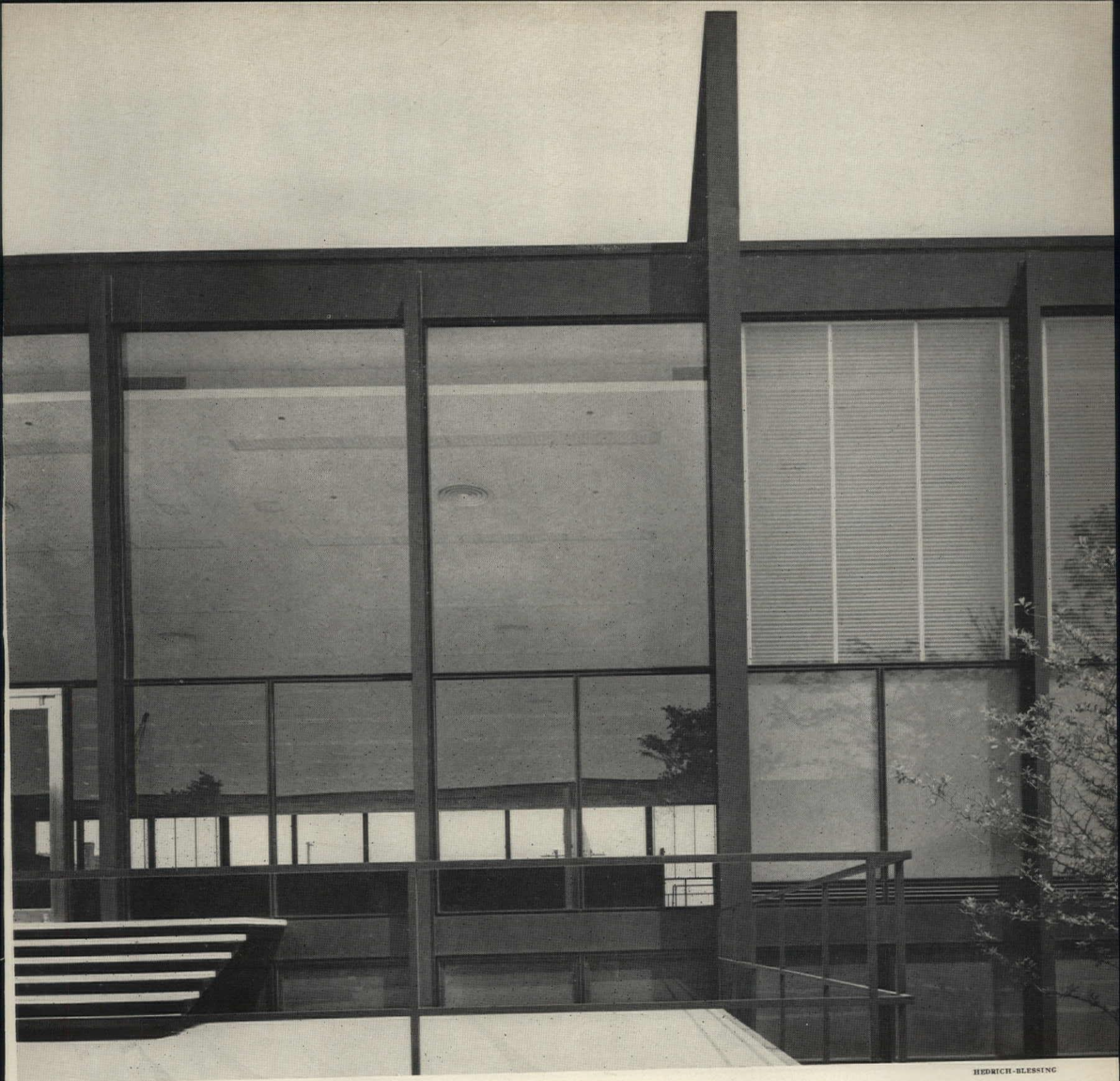
The two great entranceways shown here symbolize two great eras in modern Chicago architecture: the era of Louis Sullivan who, with his partner, Dankmar Adler, built the Auditorium (above) in 1889; and the era of Ludwig Mies van der Rohe, who built Crown Hall on the Illinois Institute of Technology campus (opposite) in 1956.

Different as these two entrances are, they share two qualities: an exuberant pride in bold structures of strong materials, dramatically expressed; and a powerful clarity of form that makes surface decoration unnecessary. Mies said that "less is more," but the maxim applies perfectly to Sullivan's massive granite archway. Sullivan said that "beauty . . . is resident in

function and form," but the maxim applies perfectly to Mies' serene, steel-and-glass structure.

The Auditorium was not typical of Sullivan's later "skyscraper style"—not even in its tower, which housed offices (including those of Adler & Sullivan, and of their draftsman, Frank Lloyd Wright), and which now houses some of the classrooms of Roosevelt University. For the Auditorium, especially around its base, was massive masonry rather than slender steel. But the spirit of structural clarity and purity was there, regardless.

The cornerstone of the Auditorium was laid by President Grover Cleveland in 1887. The building cost \$3 million—six



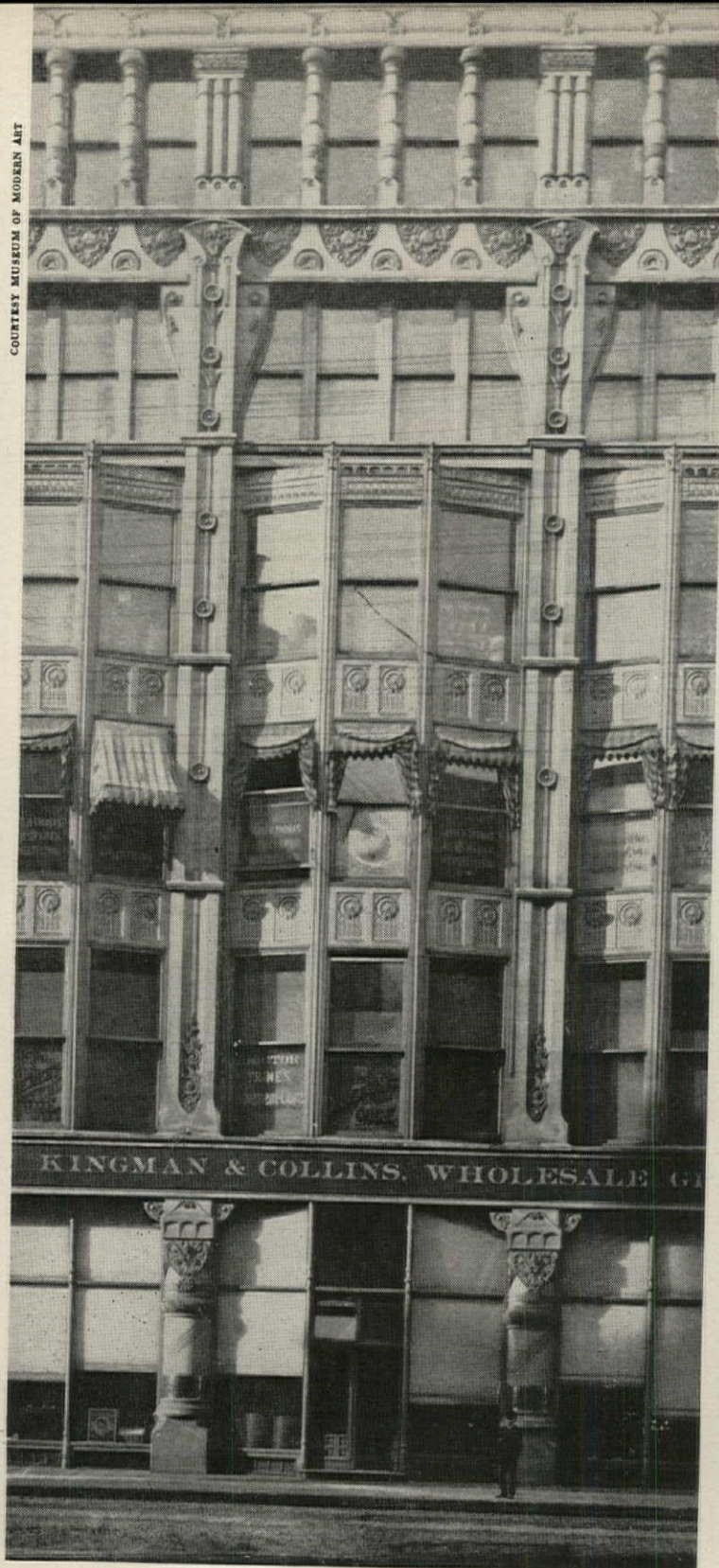
HEDRICH-BLESSING

times more than any comparable building of its day—and it was worth every bit of it: the singer, John McCormack, said that he “would rather sing in the Auditorium than in any other hall in the world.” Today the great room is a shambles, but the recently formed Auditorium Theater Council is trying to raise the \$6 million needed to restore it. Architects Skidmore, Owings & Merrill, and Sumner Sollitt Co., engineers and contractors, have donated their services toward the restoration.

Mies van der Rohe’s Crown Hall is the last major building completed by the architect on the I.I.T. campus, which he planned between 1939 and 1940. “I think this is the clearest structure we have done,” Mies said when it was finished. The roof is suspended from four enormous plate girders spanning 120 feet and spaced 60 feet apart (one is seen in the picture

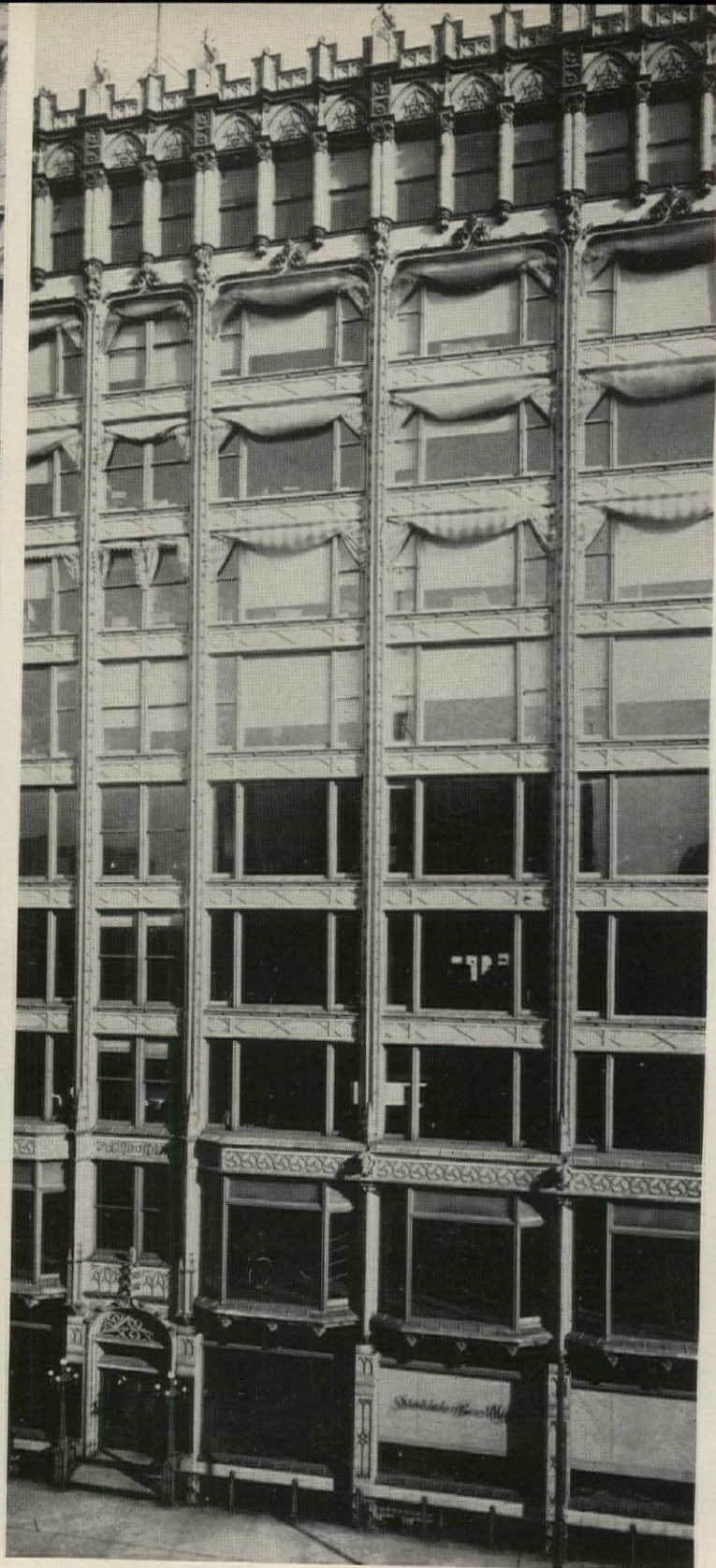
above). The upper level of the building is really one huge room, measuring 220 by 120 feet by 19½ feet high, and containing the architectural school; the lower level, lighted through clerestory windows, contains the facilities of the Institute of Design, which was founded in 1937 by the former *Bauhaus* master, L. Moholy-Nagy.

Former I.I.T. President Henry Heald (now head of the Ford Foundation) was an enthusiastic backer of Mies van der Rohe’s campus plan and campus buildings; unhappily, Heald’s successors have not shown a comparable enthusiasm: in the name of “greater variety,” the present powers at I.I.T. have called upon other architects to complete Mies’ work. But Crown Hall remains as the architectural conscience of his campus.



THE RYERSON BUILDING (top, left) is one of the least-known early structures by Adler & Sullivan—and one of the most fascinating. It was completed in 1884 at 16-20 East Randolph, and while its ornamented columns and spandrels seem about as modern as Queen Victoria's wardrobe, it had, in fact, one of the first nearly all-glass façades of the nineteenth century Chicago School—more nearly all glass than most of today's curtain walls. The exotic little structure was demolished in 1939 to make way for a bus terminal.

THE STUDEBAKER BUILDING (top, right) by Solon S. Beman was constructed in 1895 at 629 South Wabash, where it still stands. Its exterior is almost entirely of glass and iron. In recent times, certain "improvements" have been made to this façade: the most amazing of these is the replacement

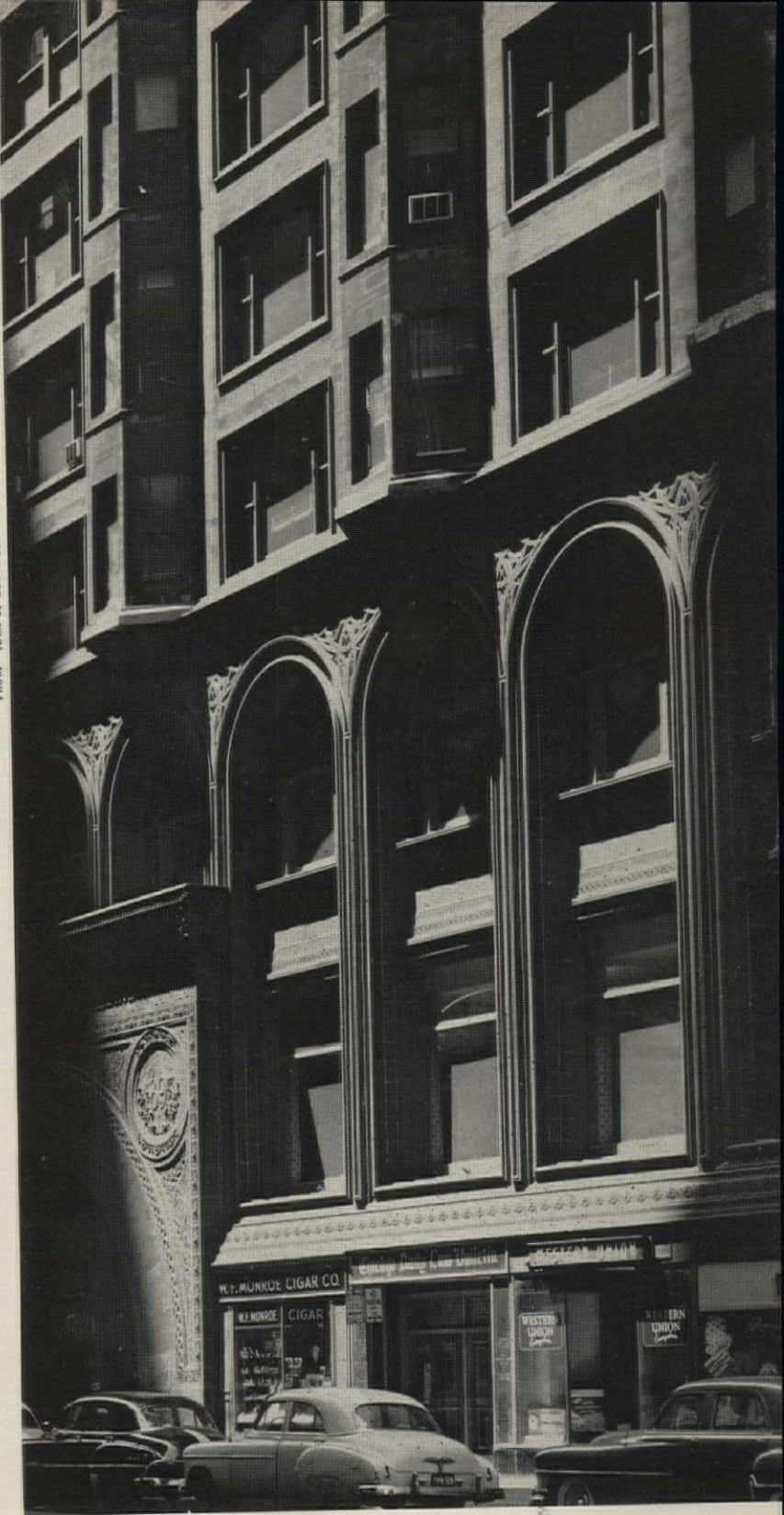


of some of the large glass panes in the center of each bay by three narrow windows—a tacit admission that Beman, in the 1890s, was somewhat ahead of Chicago in the 1960s. (The picture above was taken before the large panes were replaced.)

THE RELIANCE BUILDING (right) was built in two stages, both designed by Daniel Burnham: the first four stories were completed by 1890, and the remaining ten by 1895. It still stands at 32 North State—though latter-day Chicagoans have defaced it with the usual signs and a "modernized" base. The building represents the fullest development of the so-called "Chicago Window" (see page 126), for here the columns have been almost completely recessed and the façade is a true curtain wall of glass set almost flush with terra-cotta spandrels. The many-faceted bay windows seem strangely "modern"—



FROM "IDEA OF LOUIS SULLIVAN," BY JOHN SZARKOWSKI. © UNIVERSITY OF MINNESOTA, 1956



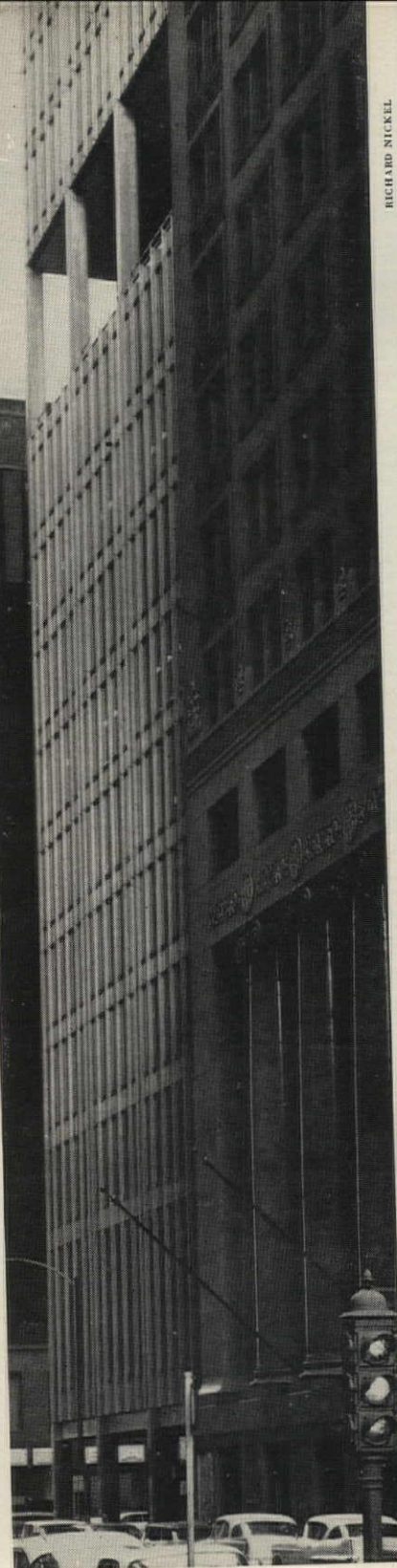
reminiscent of the latest work of such very different architects as Harry Weese in Chicago (page 102) and Franco Albini in Rome (FORUM, April '62).

THE STOCK EXCHANGE (above) by Adler & Sullivan was designed in 1893, when Frank Lloyd Wright still worked for the firm. Though no longer used as the seat of the exchange, the building is still standing at 30 North LaSalle. (The first brick building in Chicago was erected on that same site in 1837.) The Stock Exchange was framed in steel, but its exterior is largely masonry of noble proportions. Still, the great arches in the base suggest a spare and strong frame within. The building is supported on the first true caisson foundation ever used. With the Stock Exchange completed, Adler & Sullivan dissolved their partnership for want of commissions.





YASUHIRO ISHIMOTO



RICHARD NICKEL

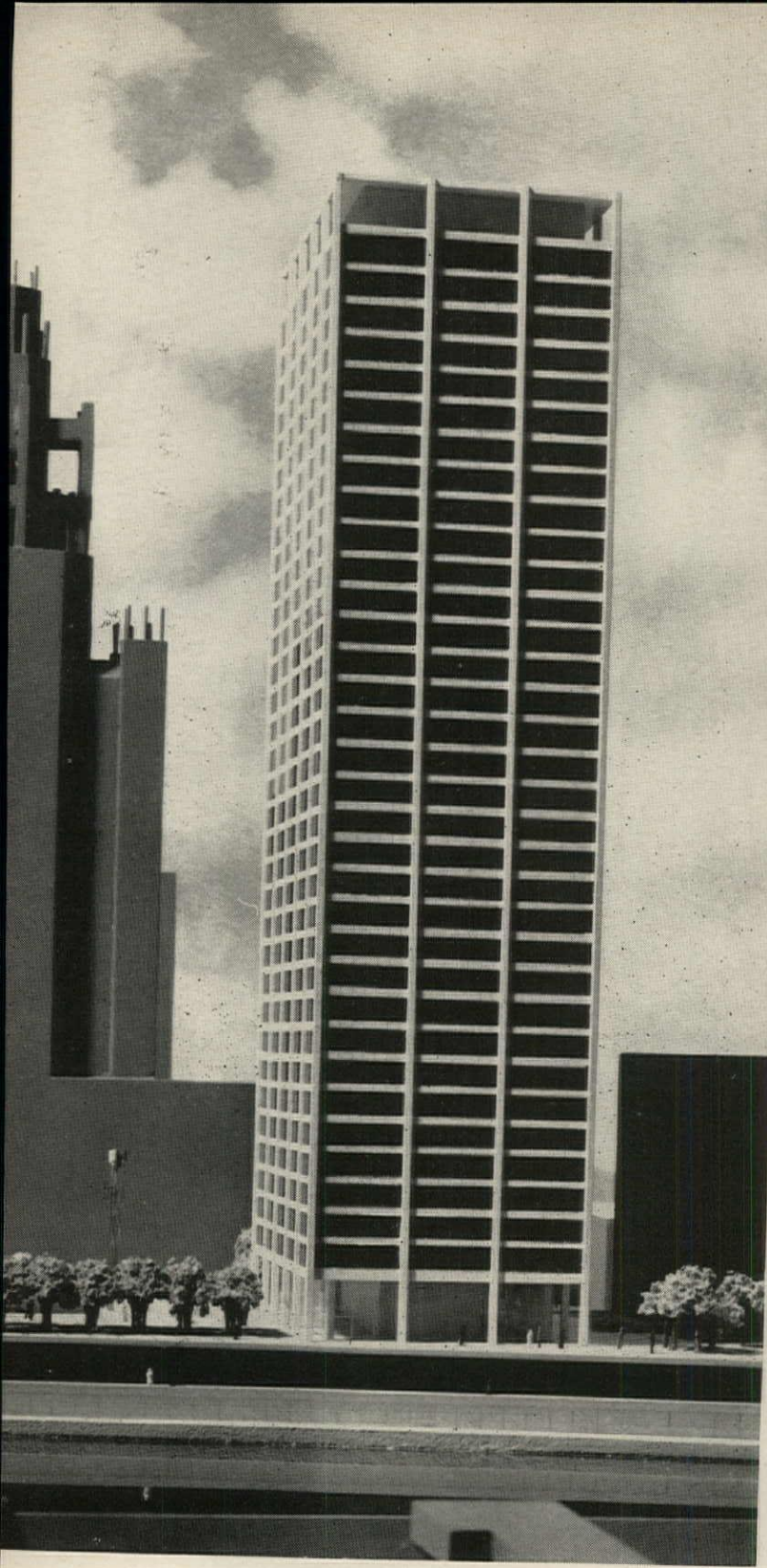


860-900 LAKE SHORE DRIVE (left) are the four metal-and-glass towers built over the past ten years by Mies van der Rohe on the edge of Lake Michigan. The first two, at far left, were completed by 1951; the other two were finished five years later. (They look darker because the window frames, as well as the column and beam facings, are of black-anodized aluminum.) The four towers are prototypes of elegant curtain-wall detailing; and their noble proportions and generous spacing show a new vision of a modern city.

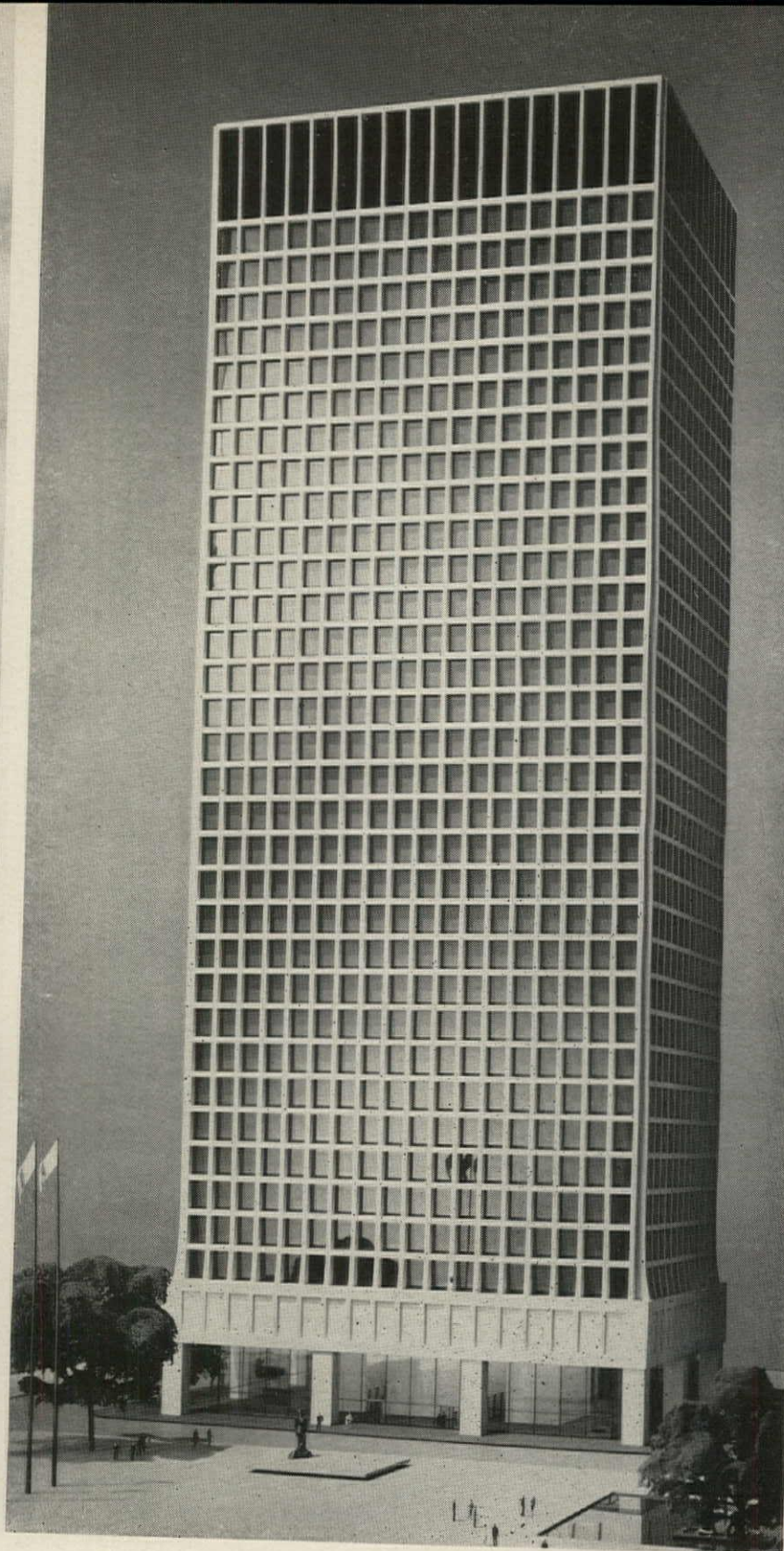
INLAND STEEL AND HARRIS TRUST (above left and center) were both designed in stainless steel by Skidmore, Owings & Merrill, and clearly show the influence of Mies' refinement of detail and simplification of structure and form. Located at 30 West Monroe and 111 West Monroe, respec-

tively, these buildings were completed during the past four years, and introduced Mies' idiom into the Loop. Inland Steel (19 stories) has exterior columns only and clear spans of 60 feet; Harris Trust (23 stories) has its columns pulled back behind its curtain wall. Floors 11 and 12 are recessed, contain mechanical equipment.

CONTINENTAL CENTER (above right), by the well-established Chicago firm of C. F. Murphy Associates, may be the best new building in the Loop to date. Currently being completed at the corner of Jackson and Wabash Avenues, the Continental has 42-foot-square structural bays (see page 130) and a wall of painted steel and glass. The building contains 680,000 square feet, is joined to Continental Casualty's present offices by enclosed connecting bridges.

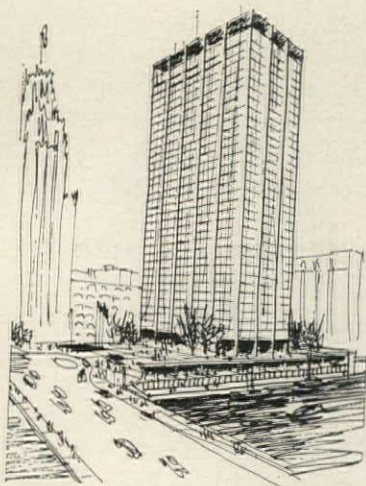


FRANK WEISS



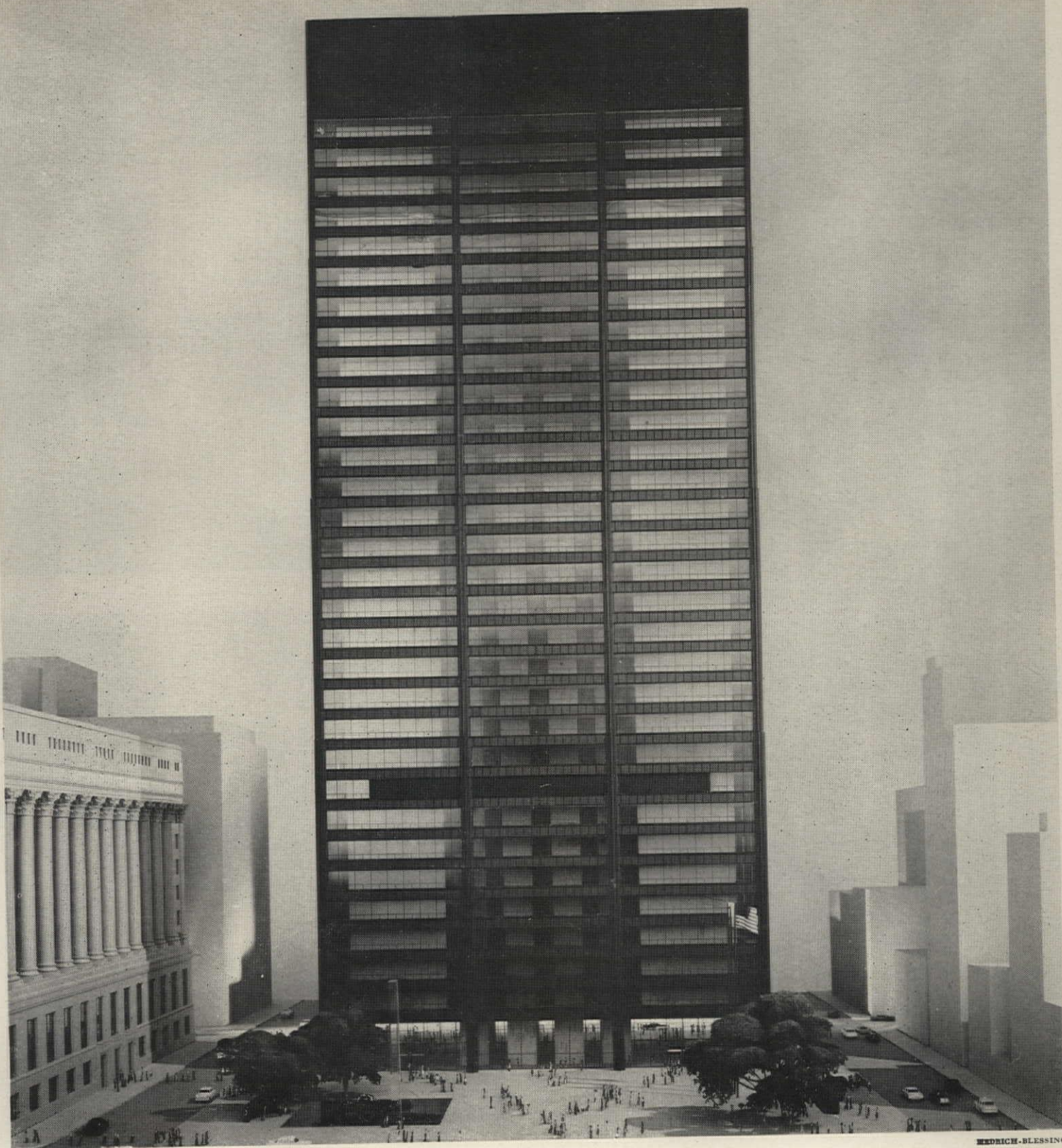
HEDRICH-BLESSING

EQUITABLE TOWER will be built on Michigan Avenue just north of the Chicago River. Designed by SOM (Al Shaw consulting), the 35-story building will have a 90,000-square-foot landscaped plaza facing Michigan Avenue. Part of this plaza will be on top of three levels of parking facilities, shops, and restaurants that will face the river. River water will be used for cooling. A subsurface thoroughfare will link the parking garage to the underground level of Wacker Drive.



BRUNSWICK BUILDING, also by SOM (George A. Fuller, contractor), will go up at Washington and Dearborn Streets, just across from the proposed Civic Center (opposite). The 37-story office tower will be framed in concrete, with load-bearing mullions supported on great girders at second-floor level. The exterior will be sheathed in white granite. The outward sweep of the building above its base is an obvious bow to the Monadnock Block of the First Chicago School.

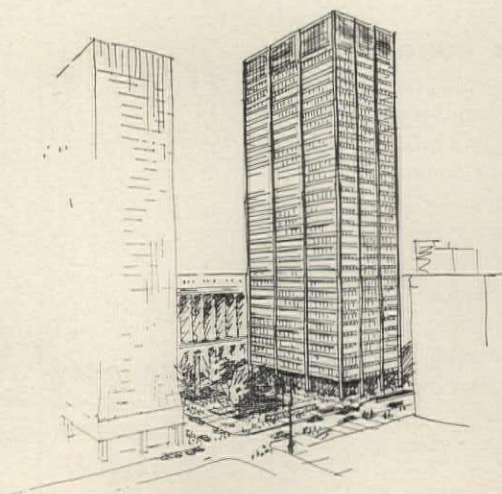


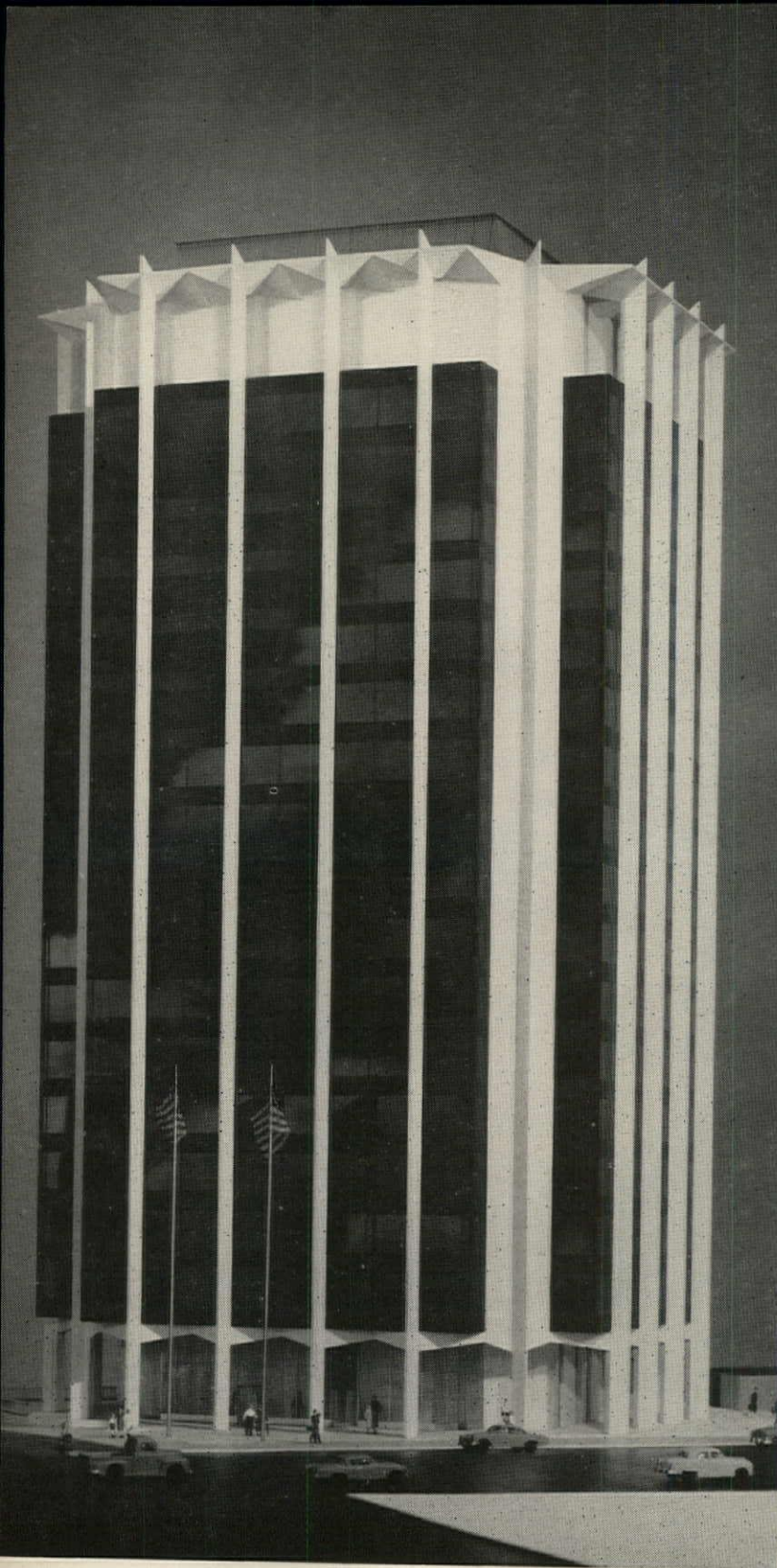


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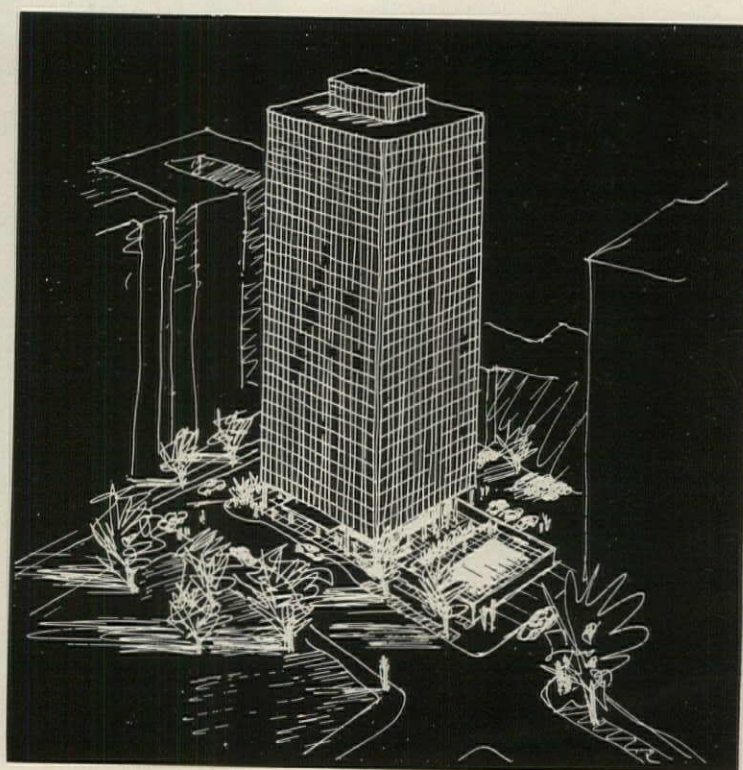
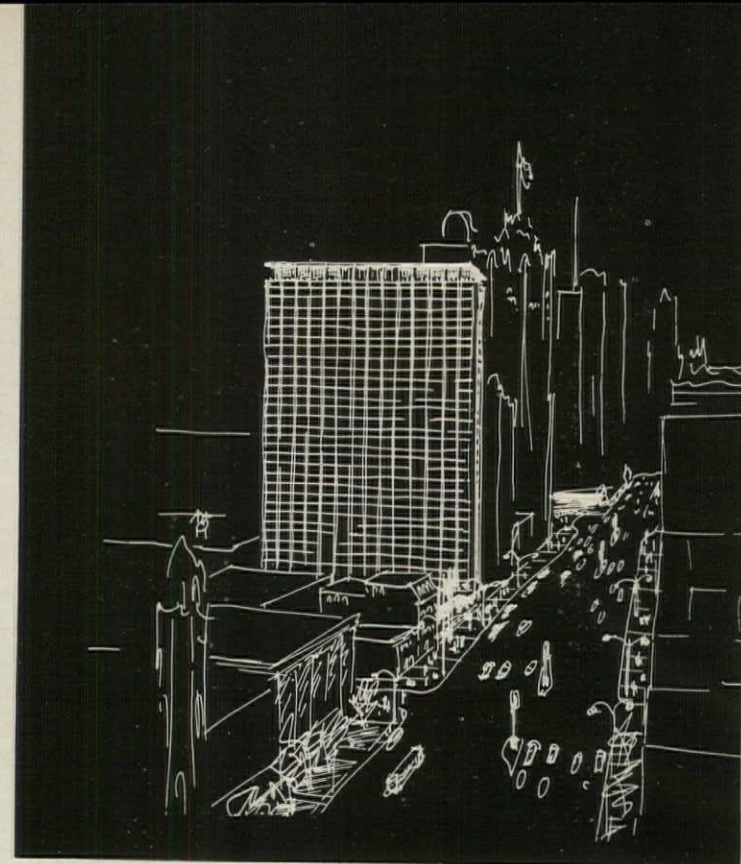
CHICAGO CIVIC CENTER (C. F. Murphy Associates, supervising architect, and SOM, and Loeb, Schlossman & Bennett, associate architects) will occupy an entire block bounded by Randolph, Dearborn, Washington, and Clark Streets. The entire Center will be contained within a single, 31-story shaft of glass and special-grade steel, which will be left exposed to turn into a beautiful, permanent russet brown. Within this shaft will be many different kinds of spaces—large and small court-

rooms, as well as offices (some of them leasable). To accommodate these different and changing functions, the architects decided upon the biggest Chicago bay to date: 87 by 48 feet. The columns will be cross shaped in plan, tapering inward as they rise to the 630-foot height of the building. The handsome shaft will occupy only 30 per cent of its imposing site, leaving the rest to a granite-paved and planted plaza for special civic functions. Estimated building cost: \$58 million.



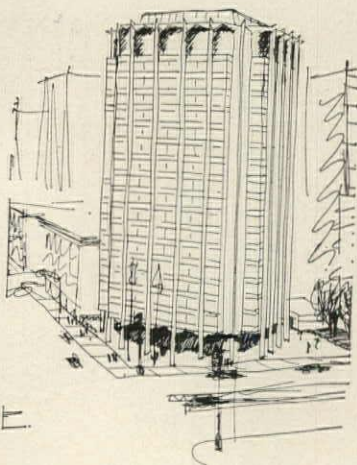


HEDRICH-BLESSING



U.S. GYPSUM BUILDING

(above) is now under construction at the corner of Wacker Drive and Monroe. The 17-story headquarters was designed by Perkins & Will, and sits diagonally on its corner site. Columns are steel finished with white marble; the spandrels will be black slate. USG will occupy the upper stories, rent out several lower floors. The unusual plan (square, with knocked-out corners) produced eight executive corner offices per floor.



MICHIGAN TERRACE (top)

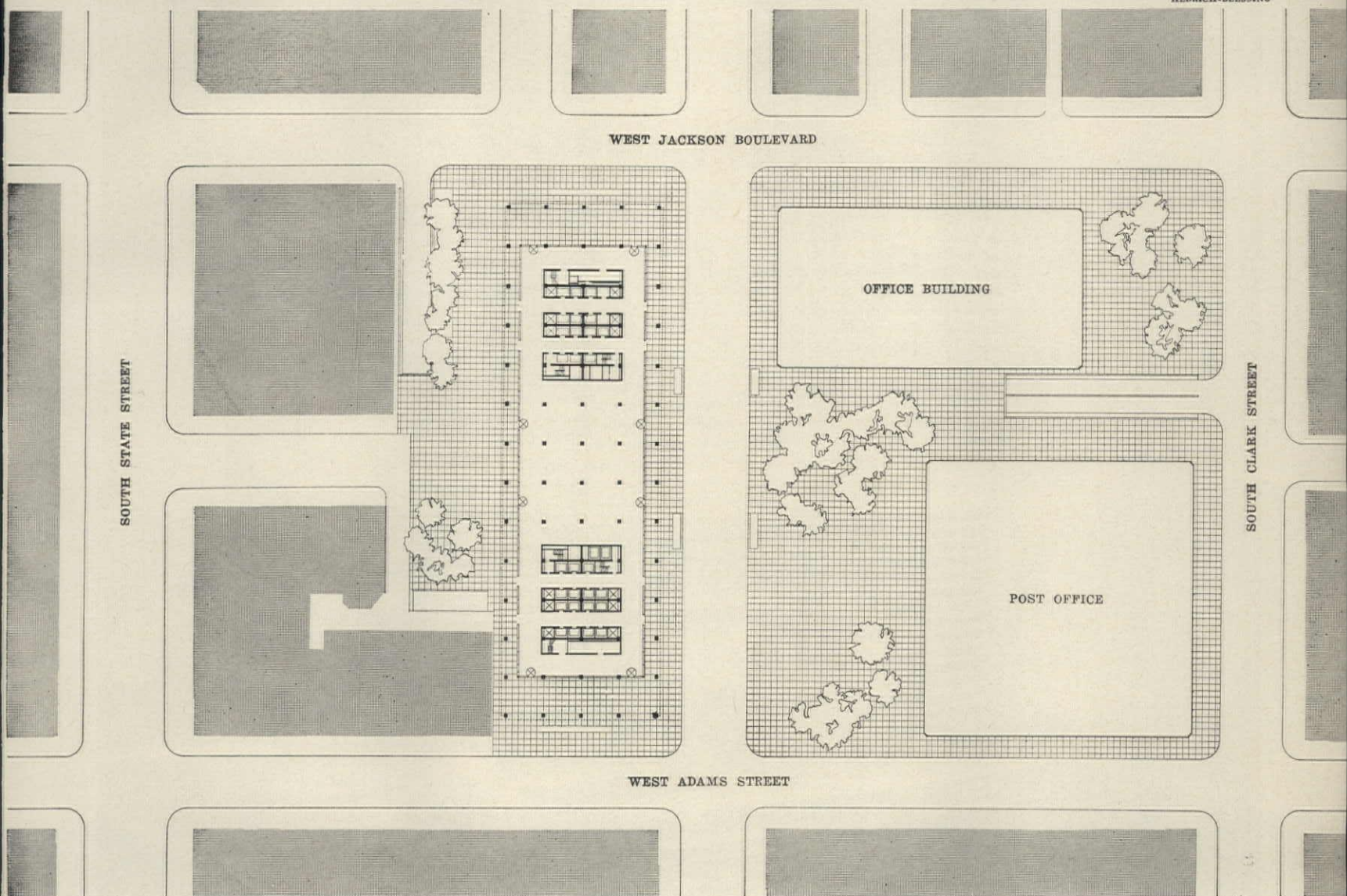
will be a luxury apartment building at 535 North Michigan—and it will look as luxurious on the outside as it is indoors: exteriors will be white and gold glazed brick, marble, and tinted glass. The 35-story structure will house 480 apartments (ranging from “studios” to six- and seven-room “deluxe” units), a penthouse swimming pool, parking, and fall-out shelter. It was designed by Guenther Malitz and will be built by the Chicago Highrise Corp.

2400 LAKEVIEW (above) will

be Mies van der Rohe's latest apartment building. It is almost square in plan, and its 29 stories will contain 265 apartments, ranging from “studios” to four-bedroom units. The building will have a two-story, glass-walled lobby and a heated swimming pool and sun-deck on part of its site. The building will be framed in concrete and sheathed in aluminum and heat-resistant glass. Metropolitan structures, who put up earlier Mies apartments, are the developers.

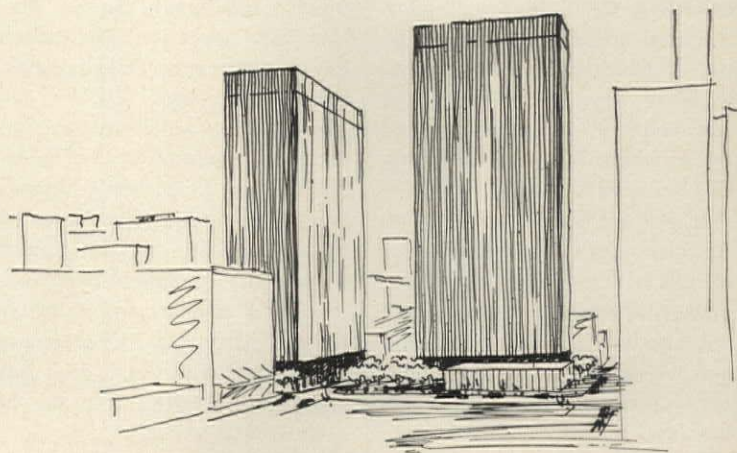


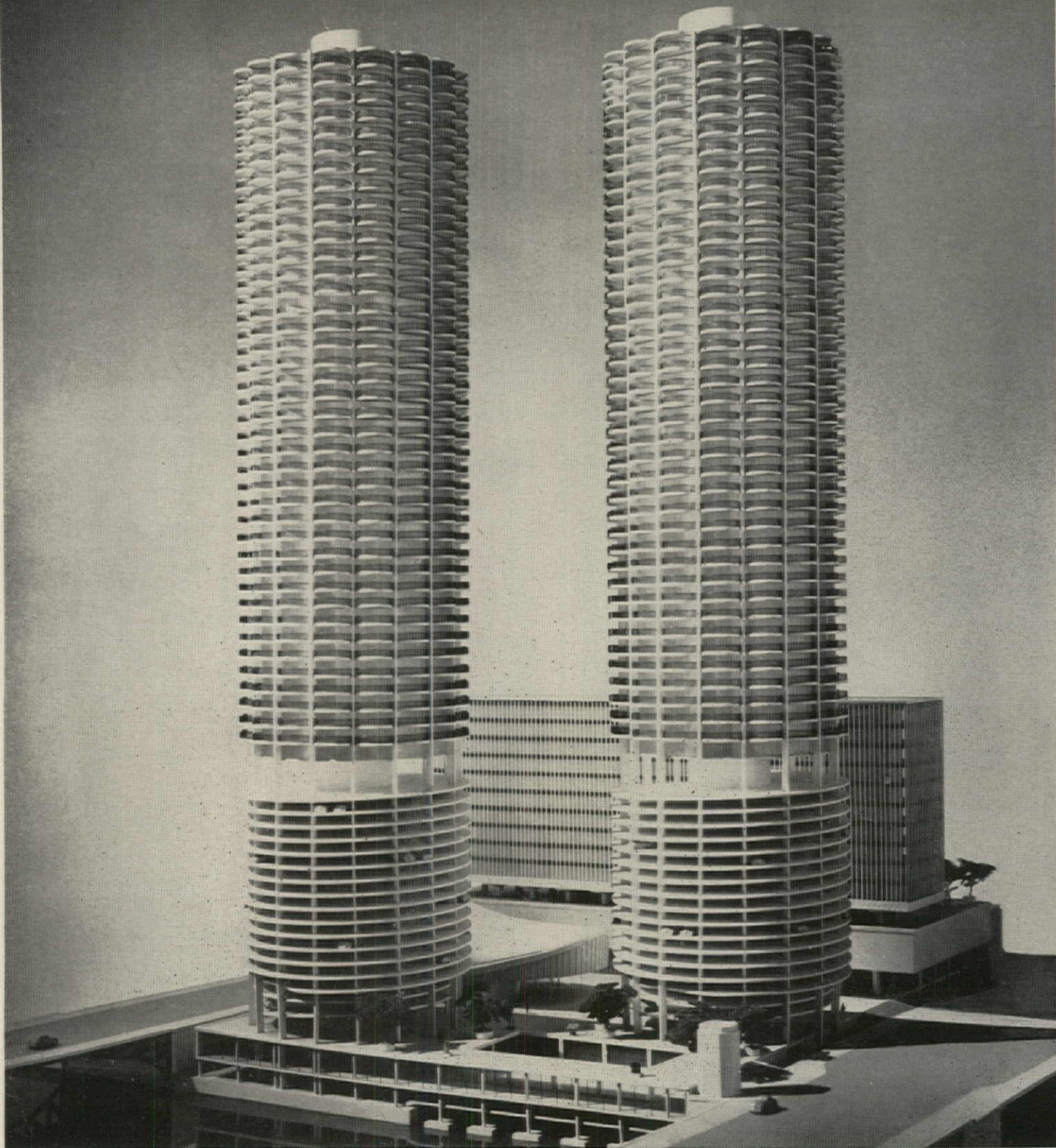
HEDRICH-BLESSING



FEDERAL CENTER will occupy most of two city blocks bounded by State, Adams, Clark, and Jackson (see site plan, above). The associated architects for the huge project are Mies van der Rohe, A. Epstein & Sons, C. F. Murphy Associates, and Schmidt, Garden & Erikson. There will be three structures in all: a 30-story U.S. Court House and Federal Office Building, now under construction; a tower (about 45 stories high) to contain additional federal offices; and a low building to house the

U.S. Post Office. The latter two are now being studied. The first building will contain courtrooms and justice department offices in its upper half, offices on lower floors. The model picture (top) shows a pedestrian's view through the arcaded ground floor of the courthouse, toward the proposed office tower and post office. All three buildings will sit on paved plazas that cover parking garages on three levels below grade. (For details of structure and wall, see page 129.)

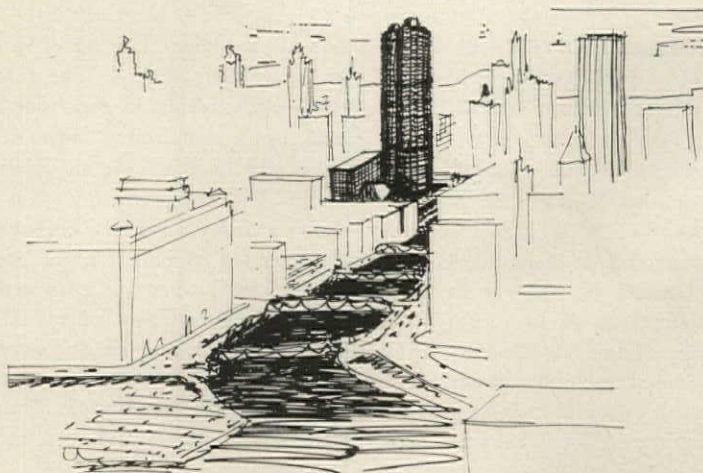


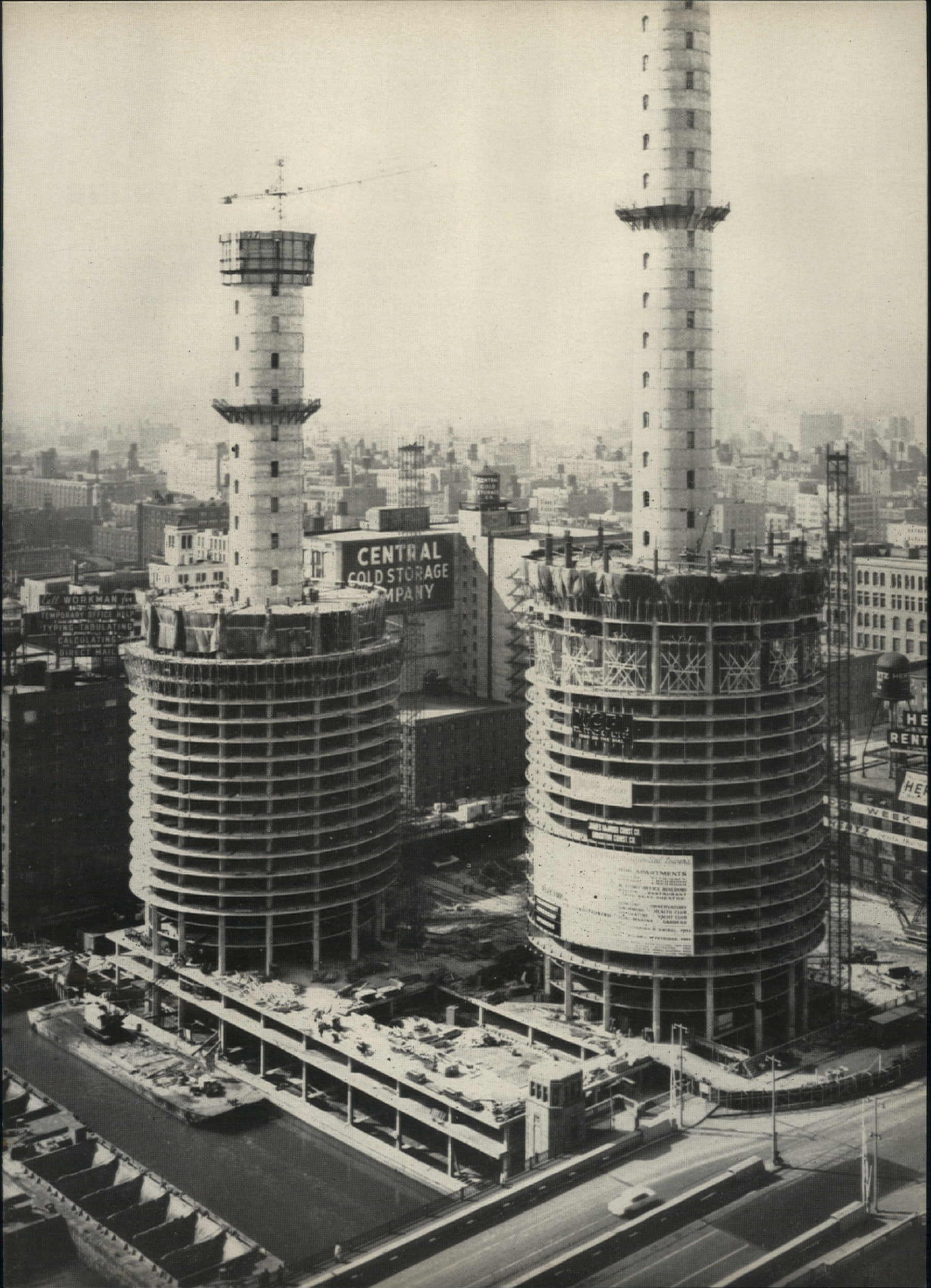


LEFT, HEDRICH-BLESSING; OFF. COURTESY PORTLAND CEMENT ASSOCIATION

MARINA CITY is, by all odds, the most amazing structure to go up in Chicago since the Ferris wheel of 1893 (page 88A)—and just about as popular. Designed by Architect Bertrand Goldberg, this “city-within-a-city” will contain 896 apartments and parking for 900 cars on spiral ramps—all this within two, 60-story high, cylindrical concrete towers. There will also be a 1,250-seat theater, a 400,000-square-foot office building, stores, bowling alleys, restaurants, a gym, and a marina

for 700 small craft. So far, Marina City has 2,500 applications for its apartments. The fantastic project is being built by the James McHugh Construction Co., and it is sponsored by the Building Service Employees’ International Union, which has invested \$3 million. One of the biggest single FHA mortgages ever written (\$17.8 million) will help pay for the apartments. The project is all-electric, with heat and hot water individually produced in each apartment unit.





HARRY WEESE: A YOUNG

Four New York City architects were invited to travel to Chicago last fall to talk before a local crowd and, as usual, a cocktail party preceded the symposium. As the drinks began, a youthful architect with the white smile of a matinee idol and the name Harry Weese walked across the crowded room to the small knot of New Yorkers and hailed them cordially: "It's wonderful to see you chaps. Why, we haven't had so many eastern architects arrive out here since 1893—and you remember how *that* came out!"

Weese is a serious, lighthearted 46-year-old Chicagoan who has earned the right to remember the Columbian Exposition of 70 years ago, when the neoclassical architects from New York took over by invitation, and, with kid gloves, strangled the bustling Chicago style.

For Harry Weese may, just possibly, be the last survivor of the "First Chicago School"—or, just as possibly, the link between it and a new Chicago direction just taking shape. The stacks of bay windows (left, 1) are not S. S. Beman, circa 1890, but Harry Weese, 1956. In a city whose postwar "Second Chicago School" has been led by the great Mies van der Rohe, Weese is one of the few serious architects to retain any visual link with the First Chicago School—looking back long before Mies to the Monadnock Building for force and flavor. (There is a structural connection too—Weese's current enthusiasm is for a new version of the wall-bearing structures which preceded the steel frame.)

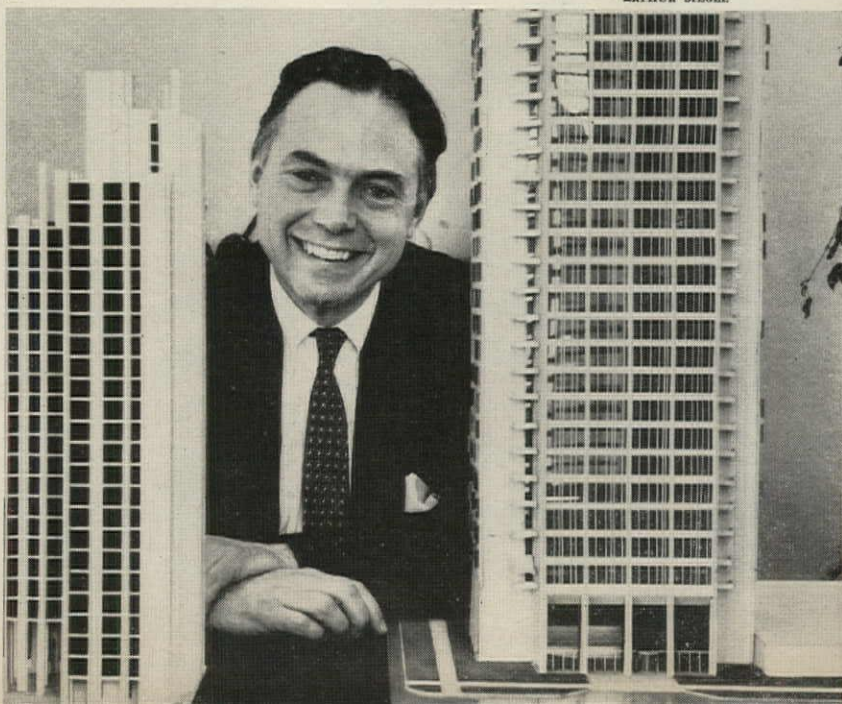
Old origin for a new force

Weese has found much more than a source of forms in the past; he has found a whole texture and feeling which prevailed in the First Chicago School three-quarters of a century ago, before industrial architecture finally evolved, and then became smooth, sleek, and withdrawn. Many other architects look today to Le Corbusier for an antidote to

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ARTHUR SIEGEL



ARCHITECT RECALLS THE OLD CHICAGO SCHOOL

blandness; Weese looked around the city where he was born. Partly as a result of this new savoring of the past, Weese, who for a dozen years has been watched as one of the most promising of young American architects, now is suddenly becoming an architectural force to reckon with—and in his own right. One measure of this is the frequency with which his firm is being considered for big jobs nationally, as well as in the Midwest.

A Weese high school in Columbus, Ind. (4) is an example both of his special style, and of the growing range of his forays. It is easy to point out how much it resembles the Selz, Schwab & Co. factory by Adler & Sullivan in 1887 (3), but this schoolhouse is a serious, even a severe, building. Another good example is his new Arena Theater in Washington, D.C. (5), a hairy animal of a building—friendly, shapely, striking, unfancy—a direct refutation of the chic industrial esthetic of most modern architecture.

So this is where Weese is tending, without belligerence and always with that smile and courteous manner. It is true that the smile may be something of a trick for confronting the world, but it also indicates high *joie de vivre*, persistent optimism, the feeling that everything is going to be all right—and it permits some sharp statements to go almost unnoticed. A friend needled him recently, "Harry, you smile all the time, don't you?" and he immediately smiled—quickly, pleasantly, impenetrably—and replied, "Well, you can say a lot of things if you smile, maybe that's it." And he smiled again.

Weese talks the way he draws: lightly, fluently, quickly, courteously, with a ready, but real laugh. He is seldom contentious, sometimes a little bland—but when the latter, he immediately is back, mocking himself. There seems not much gap between brain, and tongue, and drawing hand, but genuine sociability and constant poise. The real rarity of his manner may be a kind of courtliness that has gone

almost out of style. But he is tough too, and tireless. Says a one-time colleague: "Harry can work all night, but somehow, you know, his white shirt stays fresh and white." Weese's own reaction to the subject of esthetics in architecture is to ridicule politely the seeking of beauty: "You can't just go out after beauty in architecture, as some of these chaps say they do. Beauty is a by-product. It's like trying to go out and pursue happiness; the Declaration says you can do it, but did you ever notice how miserable the people are who try? I was brought up in the functionalist revolution and believe in it. The functionalist ethic lies at the root of everything. Why does a plane fly? Why is a lighthouse beautiful? They *do* something . . . The most beautiful piece of architecture I know is Old Ironsides."

Politeness and precocity in the suburbs

Harry Weese was born and raised in polite Chicago suburbs, Evanston and Kenilworth, the eldest child of a banker who recognized and encouraged his precocity. Before Harry was out of grade school he had designed a monogram which became official at his father's bank, and when he was 11, his parents sat him down for the classic conversation: "Look here, you like to draw and are good at it. Why don't you become an architect? That way, you can combine art and business."*

Because Massachusetts Institute of Technology was the oldest architectural school, Harry was sent there, and he never has had any regrets about the parental push. He was a star student at M.I.T. when, as a sophomore, he came across a Beaux Arts bulletin which included work by a Yale

*The talent and the talk were to be repeated. Harry's two younger brothers are also architects: John Weese, 42, a general partner in Skidmore, Owings & Merrill in San Francisco; Ben Weese, 32, in a similar position with Harry.

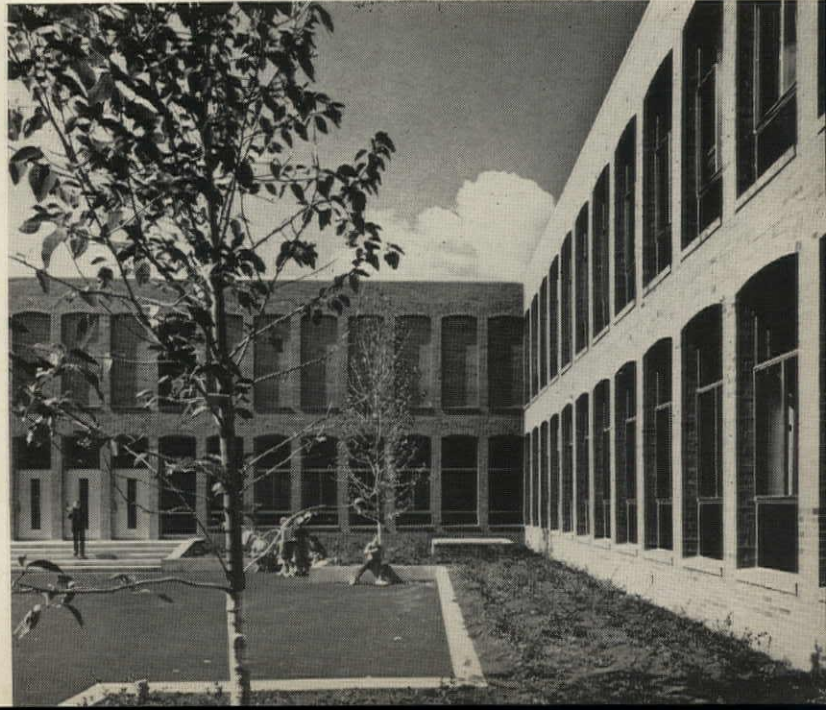
COURTESY MUSEUM OF MODERN ART

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BALTAZAR KORAB



student named Eero Saarinen. He transferred to Yale for his junior year; Saarinen, however, had already graduated, and Weese went back to M.I.T. to graduate. Then he was awarded a city planning fellowship to Cranbrook, where he was soon enough of a figure to be challenged to a duel by Eero himself concerning a girl sculpture student. The duel, which never came off, may have helped to cement the two architects' friendship, which continued strong until Saarinen's death last year.

The beginning of the SOM era

In 1939, Weese went home to look for a job in Chicago. He found it at Skidmore, Owings & Merrill, joining a handful there which included Gordon Bunshaft, Ambrose Richardson (later local SOM design chief), and Bruce Adams, who was to spend five years with Saarinen, five with Weese, and is now teaching at Yale. Thus he was in on the ground floor of the first, large, modern U.S. architectural firm; this was only about 25 years ago, but it is worth remembering that SOM was the only office of the day which would refuse to design in any other manner. Bunshaft recalls the period with gusto: "We had a ball. We worked like hell all week and went on trips weekends."

Weese recently reminisced about one of the trips, which took them to Taliesin North with Adams, Richardson, and Weese's father along. "We were all angry at Wright for what he was designing then; and he was a little austere at first. But, as it happened, my father was a Phi Delt and slipped Frank the Grip. Wright had been one at Wisconsin, and he remembered it!"

The senior architect who has always had the greatest influence on Weese is Alvar Aalto, who Weese says is "a *really* organic architect," and this influence quickly emerged when Weese left SOM after a year to design houses in partnership with Ben Baldwin, a Cranbrook comrade. It was correct, American, modern work that they did, and

like so much other correct, modern, American work of that time it had a good deal of blond, Scandinavian character laminated to it. This did not continue long, however. War-time soon put Weese into an ensign's uniform, riding the engine rooms of destroyers across the world for three years. Peacetime meant, of course, home to Chicago, and, briefly, to SOM. By then he was married to Kitty Baldwin, his former partner's sister. They set up an interiors shop on Ohio Street and imported Aalto furniture. In the back room was Harry's drafting board, his office.

Clients, of course, were a problem. His father was a good stand-by, as are many other young architects' families. (Few architects, however, have built five houses for their parents, as Weese did, all told.) Soon Eero Saarinen was treating Weese as a protégé, which helped too. One very important client who came by way of Saarinen was Irwin Miller, board chairman of the Cummins Diesel Co., the architectural thane of Columbus, Ind. Since 1950 Weese has built three branch banks, two schools, some rental housing, factories, a youth center, several houses, and other buildings in Columbus. One of the banks is shown on page 105 (7).

A journey back to the vernacular

It can fairly be said that the Weese approach at this point was not consistent. He was searching for something solid. Aalto was always in his mind; sometimes Sullivan seemed to crop up too, as in the branch bank (6) with its echo of Sullivan's famous Cedar Rapids Bank. There were other diversions, too. "We had a 'roof' phase," Weese says (exemplified in a chain of supermarkets he designed on the West Coast for Purity Stores). "And I guess we did go through a 'delight' phase too." He recalls touring the University of Chicago campus with Eero Saarinen two years ago, after he had finished Pierce Hall, the undergraduate dormitories (10), and Saarinen's Law Library was nearing completion. It turned out to be a fairly doleful tramp. Neither had very



much to say in praise; finally, toward the end, Saarinen said, "Harry, I think maybe we both got as close to being delightful as we'll ever get—and *you got closer*." Both architects were by then trying hard for seriousness in form and it was about then that Weese seems to have found himself in the old Chicago vernacular.

It is probable that Weese's U.S. embassy building for Ghana was the real beginning of his emerging distinction. Certainly it attracted wide public attention and approval. Few Americans have seen this building (even the architect has not) but it retains its reputation as near the top of the State Department's Office of Foreign Buildings program. The Ghanaians like it so much they are buying it from the U.S. It has shape, roughness, and an intimation of reality which many of the other FBO buildings missed. Says Weese: "The FBO program ruined a great deal of American architecture by giving license to exotic imports." A second sizable commission—and design—which was important to Weese was the State Bank of Clearing in Chicago (interior, 9).

Another way Weese indicates seriousness is in his preoccupation with the urban housing program. Back home in Chicago, in the Hyde Park-Kenwood redevelopment area, Weese designed the townhouses (8), and he continues to be interested in this urban housing form as the best solution to family living and the best defense the city has against the suburbs. His proposal for a redevelopment area in a slum area near the Loop (11) illustrates his feelings on the proper mix of low rise and high rise. He proposes that federal write-down money be focused on townhouse construction, not high rise. When a neighborhood has been rescued, he maintains, private money can do the high-rise components without government help. "Private developers aren't much interested in houses in the city; overly generous zoning lures them into the air. But they're interested in infiltrating their slabs into vintage townhouse streets—which, of course, destroys the very environment they seek." A further-out suggestion is the Weese

proposal to build 25 square miles of islands two miles off the Chicago shore (see page 140) for high and low housing. His investigations indicate this land could cost less than \$3 per square foot to create, considerably below prices of cleared slum land.

Today the work on Weese's boards indicates he is going further in the direction of Aalto by way of early Chicago. Notable for this is his design for a bearing-wall apartment for No. 1 Scott Street in Chicago (12). Unlike the Monadnock's, these bearing walls do not encase the usable interior space in exterior barriers; instead they are sets of fin walls folded around and through the design, to be poured into slip-forms. Says Weese, "These are extruded buildings. There is no reason why you can't build a 30-story structure using slip-forms in 39 days. We know they build silos that way. For the past year and a half we've been tooling up to do this in our office, and now we're ready to roll."

Slipping out of today's trap

"Slip-forming makes towers competitive with slabs. We say, hopefully, that this is good living, as well. You've got to think of people. You simply cannot go on putting them into slab apartment houses with endless corridors. It is too much like life in a motel. It is the brutal result of a simple idea harnessed to arithmetic. Architects get caught in the trap, and some of them are happy there."

Today Weese's office staff numbers 26, with \$11 million of work on the boards, and \$6 million in construction. Several of the staff are associates in the firm, sharing profits (but not losses). An encouraging amount of hard-to-get college work is coming in. His largest completed work is the Cummins Diesel plant in Columbus, Ind. (FORUM, April '62).

Harry and Kitty Weese and their three daughters (Shirley, 13; Maria, 11; Kate, 7) live in an elderly, spacious, ground-floor apartment in the Near North. Many mornings he walks downtown to his office, and most days he will trudge down

PHOTOS: HEDRICH-BLESSING

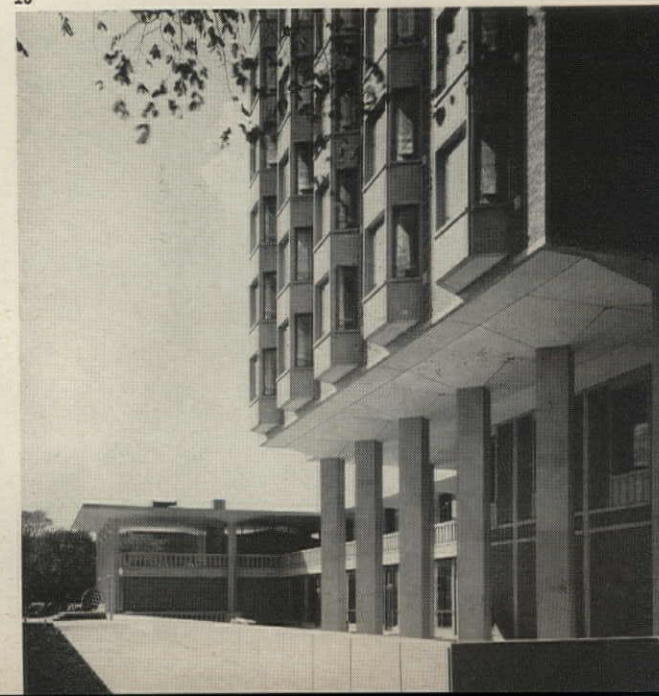


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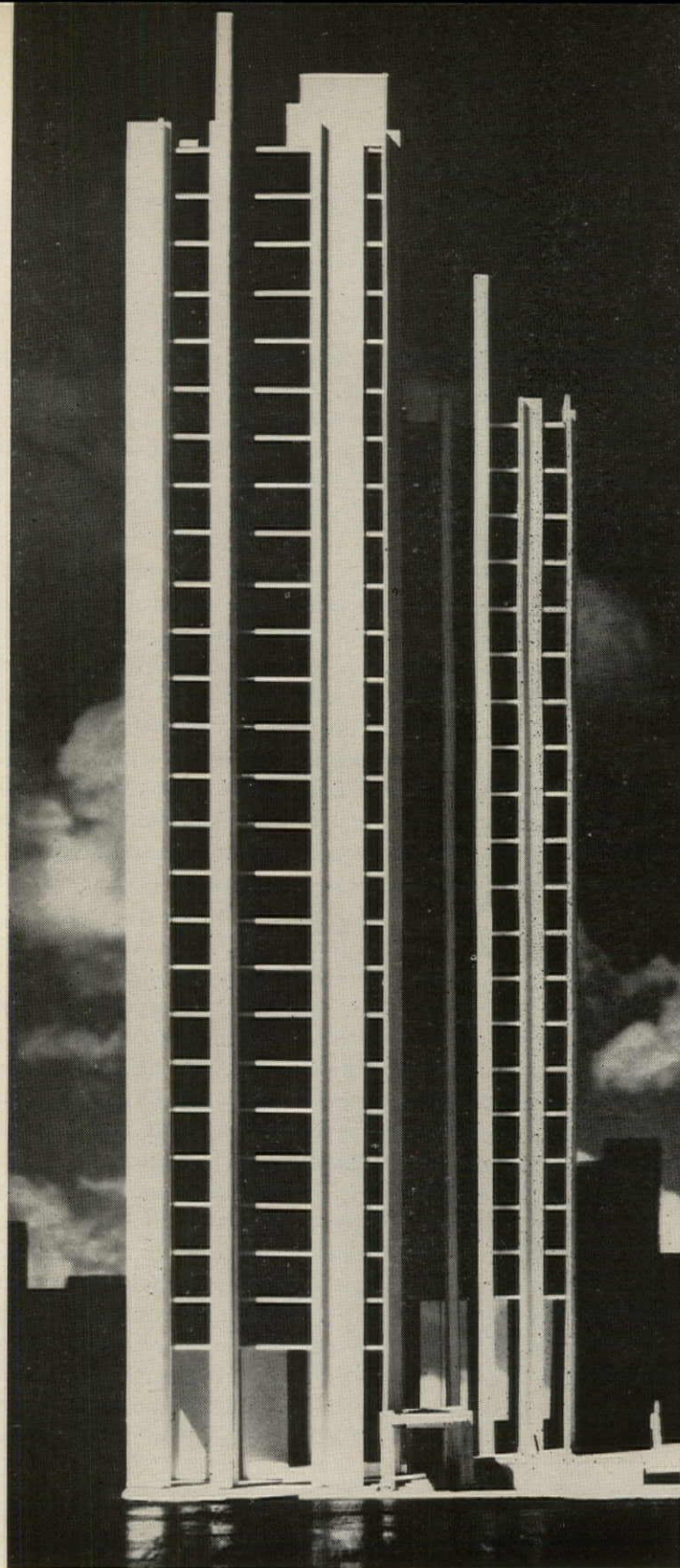
the sandy Chicago beach five minutes of the way. "Sometimes after a rain, mine is the first footprint," he reports, with awe. "In a city of 3½ million, no others. Think of that." Then he grins at his awe.

The Weeses also own a house on five acres in the countryside near Barrington for weekends and summers. It sits beside a swimming pool, its roof an architectural experiment, hanging in tension. Weese reminisced one evening late last winter, in Chicago, that in the five houses he built for his parents, his father always demanded pitched roofs, with overhangs, but never got them—always, instead, modern, brief, flat (or one-way) roofs. It was a year after his father died, in 1956, that Weese built his own house in the country, with a steeply pitched roof and deep overhangs all around. His explanation of this roof design was practical: "If it rains, I don't like to have to get up at night and close the windows." Then he paused, recalling his more dogmatic architectural days, and the smile came again. "I guess it used to be my father who got up to close the windows."

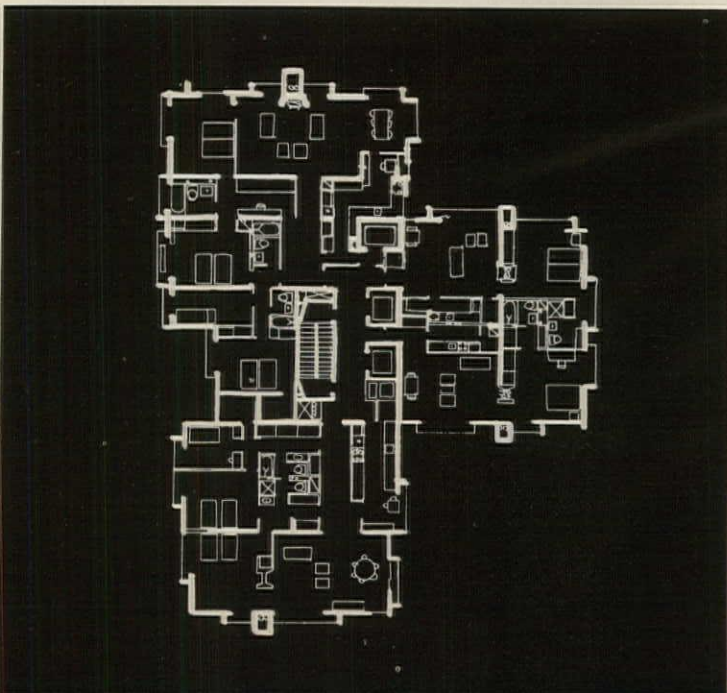
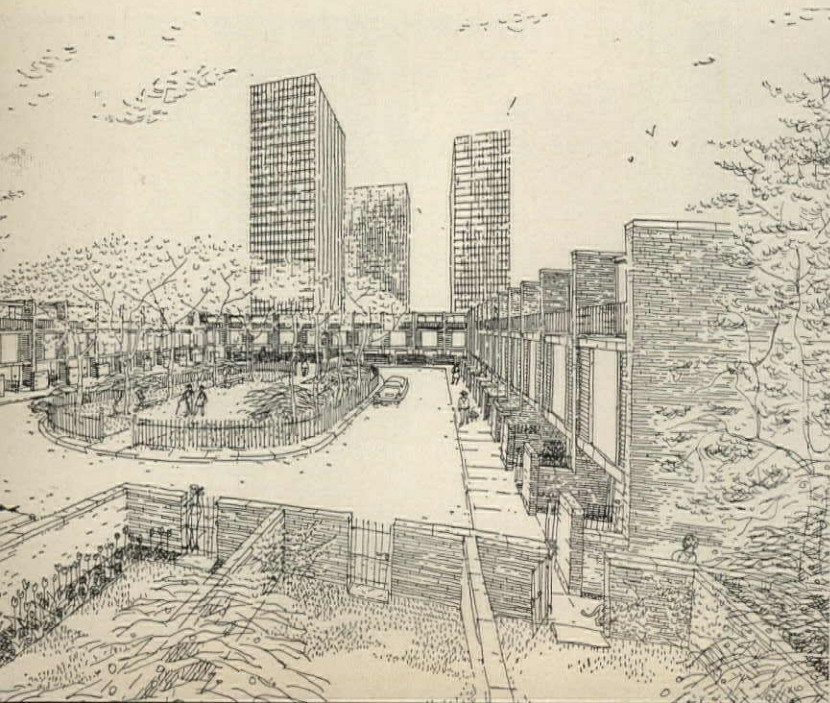
Flying home

Weese flies around the country a great deal on business these days. His brochure states: "We find distance a negligible handicap in the performance of our contracts." The dozen years of hard pulling are paying off; the success he has been pursuing has now begun pursuing him, and he is obviously enjoying it. But, met in Manhattan, or Boston, or Washington, he always seems cordially impatient to get to the airport and back to Chicago. On that recent winter evening, he sat snugly in his office on the second floor above Michigan at Ontario as the windows darkened, and the tall Chicago buildings' lights began to sparkle in the midnight-blue sky, and he tried to explain why he feels so strongly about Chicago. "The opportunities are immense." He paused. "I feel *needed* in Chicago. I don't think I would anywhere else." The smile flashed.

WALTER MCQUADE



HEDRICH-BLESSING



2

A CONTINUING TRADITION IN

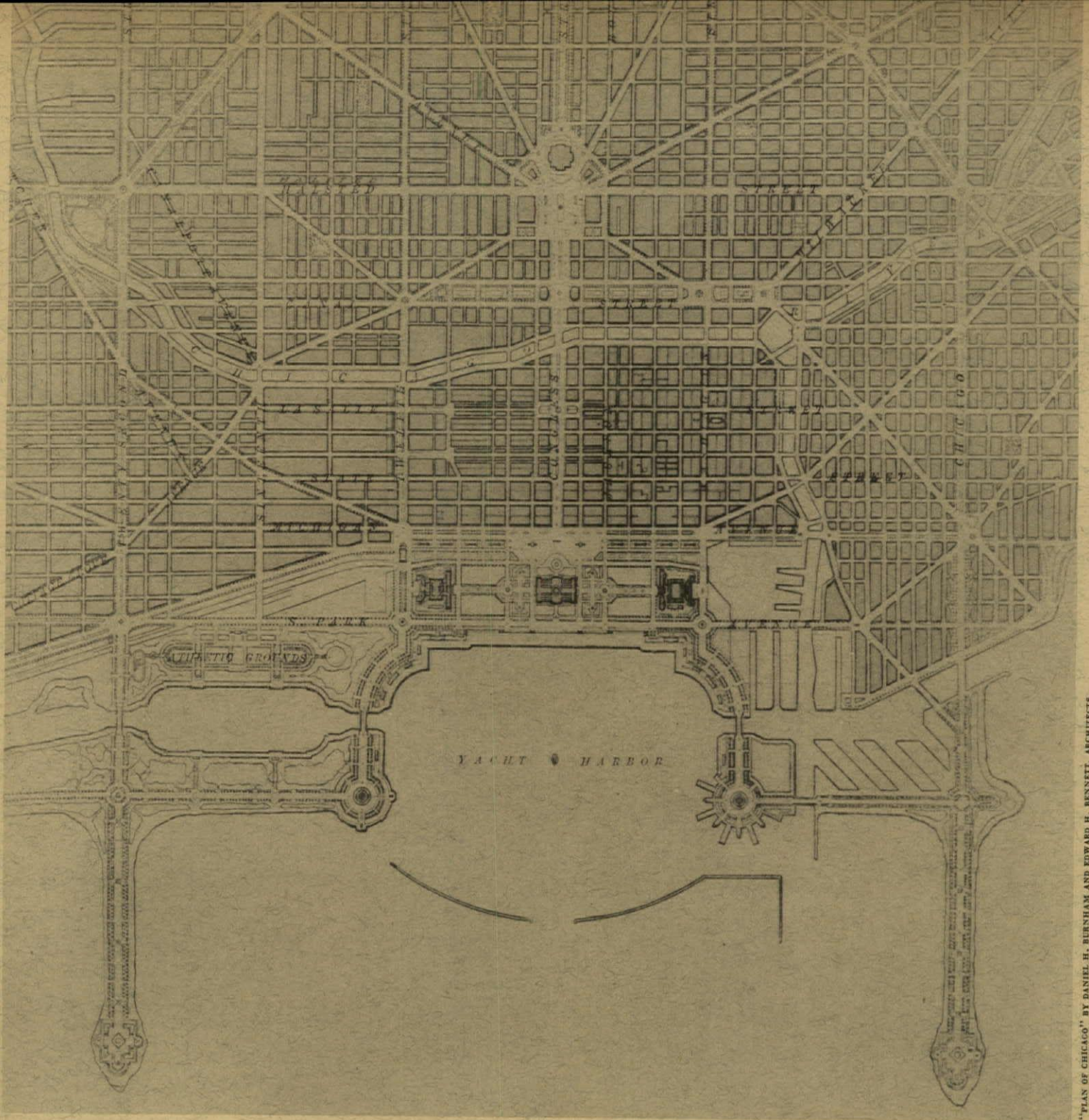
URBAN DEVELOPMENT

"Here is a tall bold slugger set vivid against the little soft cities," Carl Sandburg wrote in 1914. Chicago is slugging still: just as it built and planned after the Great Fire of 1871, the city is building and planning today, after its post-war confrontation with hideous slums, general obsolescence, and racial tensions. And as in the nineteenth century, the building sometimes precedes the planning—and with equally unhappy results.

What were and are the forces, private and public, that gave and continue to give impetus to Chicago's bold efforts? Who are the people trying to make some sense out of these vigorous and often uncoordinated efforts? What are the lessons to be learned, both from Chicago's mistakes and from Chicago's successes?

Few American cities ever started with a better break in planning; that break was the Burnham Plan (pages 108-113), and it continued to shape Chicago until World War II. Few American cities ever got a better start in clearing slums (pages 119-121), at a time when those slums were becoming totally intolerable. And few American cities have developed a more vocal, indigenous leadership for self-help in deteriorating areas (pages 122-124).

Yet, few American cities are in greater need today of a new plan—and of the will to carry it out—than Chicago. Its present difficulties present a challenge which it must meet; and it will need all its raw, slugging energy to meet it.



"PLAN OF CHICAGO" BY DANIEL H. BURNHAM AND EDWARD H. BENNETT, ARCHITECTS. EDITED BY CHARLES MOORE. PUBLISHED BY THE COMMERCIAL CLUB OF CHICAGO.

BURNHAM'S PLANS SHAPED MODERN CHICAGO

The 1909 Burnham Plan for Chicago is the classic American master plan. It was not the first one of its kind. But in its time it was the most thorough appraisal of a city ever made and its proposals envisioned the most complete redevelopment of a city till then attempted. And looking at the Burnham Plan today, it is astounding that so much of it was realized.

Indeed, most of the major features of today's Chicago are products of the plan: the grand boulevard development of Michigan Avenue, the elegant foundations and the terraces of Grant Park, the double-decked Wacker Drive and bridges across the Chicago River, the axial cut of the Congress Street Expressway, and the long string of lagooned parks to the north and south along the lake. Even the 90-degree turns on the Outer Drive at the crossing of the Chicago River mark an incomplete stage of the plan, which was faithfully followed up through World War II.

Less well-known are other contributions of the plan. One is a necklace of parks and boulevards strung through the gridiron of the city, from Jackson Park near the University of Chicago, around the West Side to Lincoln Park on the north. Another is a wide green belt of forest reserves farther out, now squeezed by suburbs on either side. Moreover, whatever logic there is in the arrangement of the Chicago railroad passenger terminals is due to the plan, and to the persistent efforts of its proponents over nearly a half-century of political activity and public agitation to consolidate transportation facilities—a consolidation still largely unrealized.

Political activity and public agitation began at least a decade before 1907 when Daniel Hudson Burnham and his associate, Edward H. Bennett, went to work on the plan in a specially built penthouse atop the Railway Exchange Building. Burnham's own interest in planning—and in great civic enter-



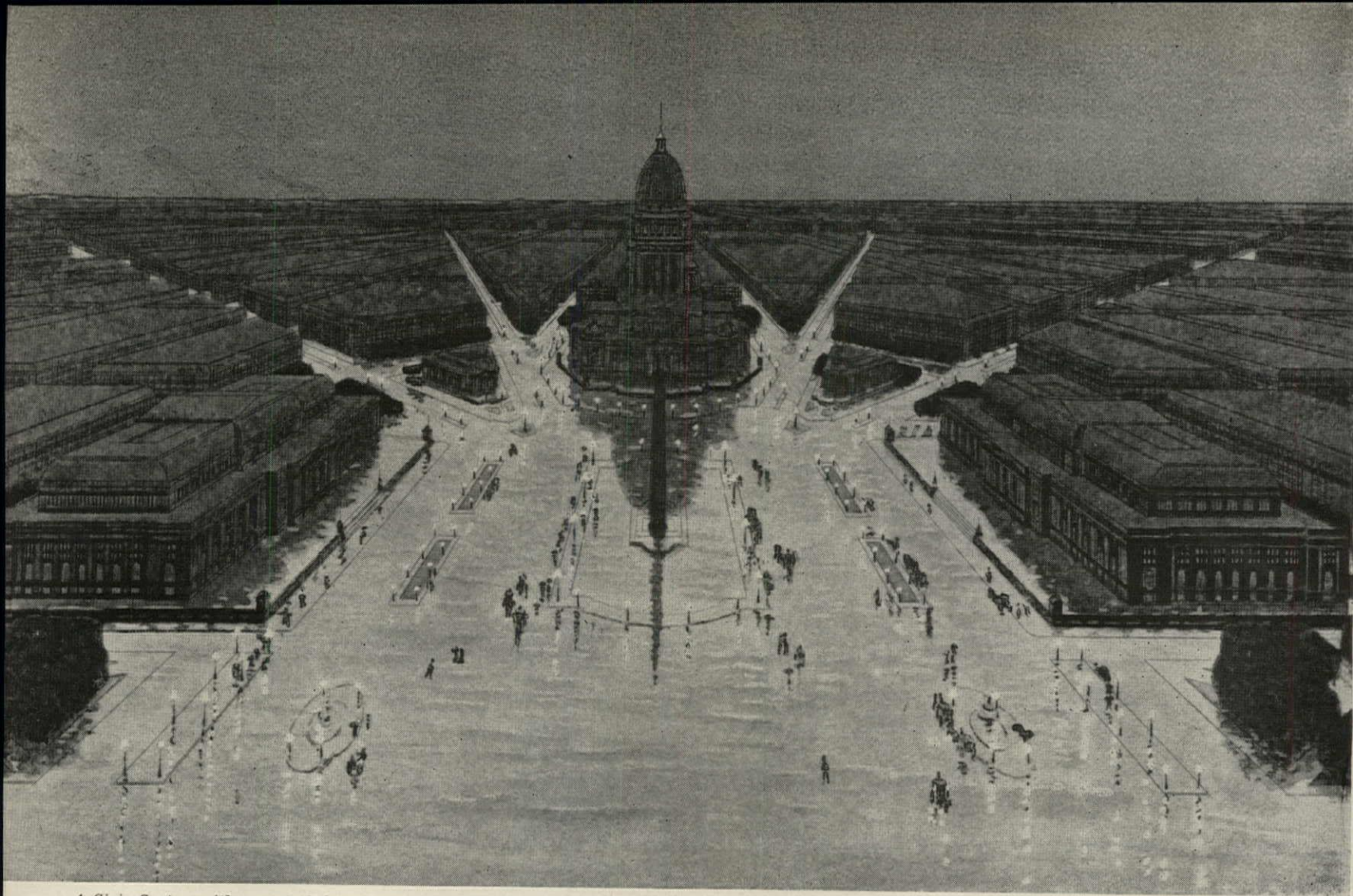
Burnham's proposals for Chicago's center (opposite) established a Congress Street axis and opened the city to a grand lake-front terrace (above)

prise—stemmed from the World's Columbian Exposition held in Chicago in 1893. The Exposition was conceived, planned, and built under Burnham's management in something less than three years.

It is an odd quirk of history that this Fair should, at once, give life to the American city planning movement—and slow down the modern movement in architecture. But so it did, perhaps because Burnham's able young "designing" partner, John Wellborn Root, died of pneumonia caught outside his house on Astor Street as he bid good-bye to the eastern members of the Fair's Board of Design on their first trip to Chicago. So it was that the easterners, as Sullivan testifies, took over the planning of the Fair. Taking Root's rough sketch plan of a central lagoon with a forest island in its center, they developed the elegant succession of classic spaces in the final scheme. And reversing Root's idea of varied and polychromed buildings, they developed a classically ordered "White City" on the lake front.

Burnham, the superintendent, went along with it all. And so did the rest of the American people, who came to see it in droves. Even that eminent American, Henry Adams, came admiring: "Chicago tried at least to give her taste a look of unity," he wrote. "One sat down to ponder on the steps beneath Richard Hunt's dome almost as deeply as on the steps of Ara Coeli, and much to the same purpose. Here was a breach of continuity, a rupture in historical sequence! Was it real, or only apparent?"

Burnham was determined to make it real, and, at 50, after a first trip abroad to study the wonders of Greece and Rome, he turned to the task with characteristic energy. His first planning effort was for an eight-mile-long lake-shore park and drive from the Loop to the old fair site in Jackson Park on the South Side. In 1896, James W. Ellsworth, president of the Illinois Central Railroad, gave a small dinner in his home at which Burnham's park plan, to be built on filled land, was unveiled. Burnham's biographer, Charles



A Civic Center, with a central domed structure taller than any other building in the city, was proposed by Burnham to draw development westward

Moore, writes of this occasion: "The guests at the dinner, stirred by Mr. Ellsworth's endorsement, took fire from Mr. Burnham's enthusiasm. George Pullman said he stood ready to give his riparian rights in order to pave the way. Marshall Field acquiesced as to the advantages of the scheme and the advantages to Chicago. Philip D. Armour went so far as to prophesy that some day a plan so fine in conception and so feasible would be carried out." Brave words—but nothing happened to further the plan for ten years!

In the meantime, Burnham was busy elsewhere developing plans for San Francisco, Manila, and Cleveland. And in 1901 the McMillen plan for Washington, which was heavily influenced by Burnham, was completed.

A lake-front terrace

But Burnham never wavered in his attention to Chicago. In 1897, for example, he turned to the Merchants' Club, a group of young Chicago businessmen, and urged them to take up the planning task. Even then he had the main outlines of his plan in mind: "Between Randolph and Twelfth are 13 streets coming out of the city and terminating in Michigan Avenue. The central one is Congress Street, which will be made the principal axis of the design . . . chief aim of the 300-foot strip of park is to bring about as far as practicable a symmetrical appearance of the parts on each side of the axis. The second aim is to produce an effect far back in the old city. . . . The great terrace called the lake front is to have its effect on anyone walking toward the lake on any cross street."

The Congress Street axis, which continued to be a feature

of Burnham's plans, was at the southern edge of an intensive development in central Chicago, one block outside of the elevated railway circuit that described the Loop. Why did Burnham select it as the most important east-west street? The undoubted reason is that it was the center line of the portion of the lake front that Montgomery Ward and other Michigan Avenue property owners had succeeded in saving for public parks from the Illinois Central Railroad, which otherwise occupied the lake front. Burnham, always the realist, started with what was in hand. Yet, despite Burnham's realism and persuasive words, the plan did not at first carry the business leadership along with it.

Though he became increasingly active on a national front, Burnham came back again and again to the idea of a plan for Chicago. At luncheon meetings downtown and at tea spread on the green lawn of his own great terrace overlooking Lake Michigan at Evanston, he urged on the leaders of his city the idea for what he saw as his major work.

In 1903, he tried to sell his plan to the powerful Commercial Club, obtaining the influential support of Club President Franklin MacVeagh, a Chicago banker who was later to become Taft's Treasury Secretary. But nothing happened until 1906, when a committee of the Merchants' Club consisting of Walter H. Wilson, Charles D. Norton, and Frederick A. Delano (president of the Wabash Railroad) "presented" themselves to Burnham and asked him to help them undertake the plan as a Club project. Burnham, however, felt committed to the Commercial Club. Then in 1907 the Merchants' Club was combined with the Commercial Club and the plan was at last undertaken. Although \$50,000

ILLUSTRATION ABOVE AND ON PAGE 112 FROM "PLAN OF CHICAGO" BY DANIEL H. BURNHAM AND EDWARD H. BENNETT, ARCHITECTS. EDITED BY CHARLES MOORE. PUBLISHED BY THE COMMERCIAL CLUB OF CHICAGO.



COURTESY DEPT. OF CITY PLANNING, CHICAGO

The Congress Street Expressway follows a route prescribed by the plan



The finished plan was revealed to the sponsoring Commercial Club at a luncheon in 1908. Among those present (l. to r.): Burnham,

Edward F. Carry, Edward H. Bennett (coplaner), John de la Mater, Charles G. Daves. Foreground: John G. Shedd, who later donated the lake-front aquarium.

was raised to finance the work, and Burnham provided his own services free of charge, the three-year work on the plan required an additional \$25,000 to finance.

When Burnham built his penthouse and undertook the work on the plan in 1906, he was just past his sixtieth year and at the height of his fame. His long preparation for the work paid off. The businessmen and the politicians flocked to the penthouse to confer on the plan. Often a lunch would be spread on a big worktable and there at the top of the city, under the persuasive influence of Burnham, agreements were forged and differences forgotten.

The grand unveiling

Having carefully nurtured and waited long for civic support, it now came to him in ample measure and the business and political leadership of Chicago beat a path to his door.

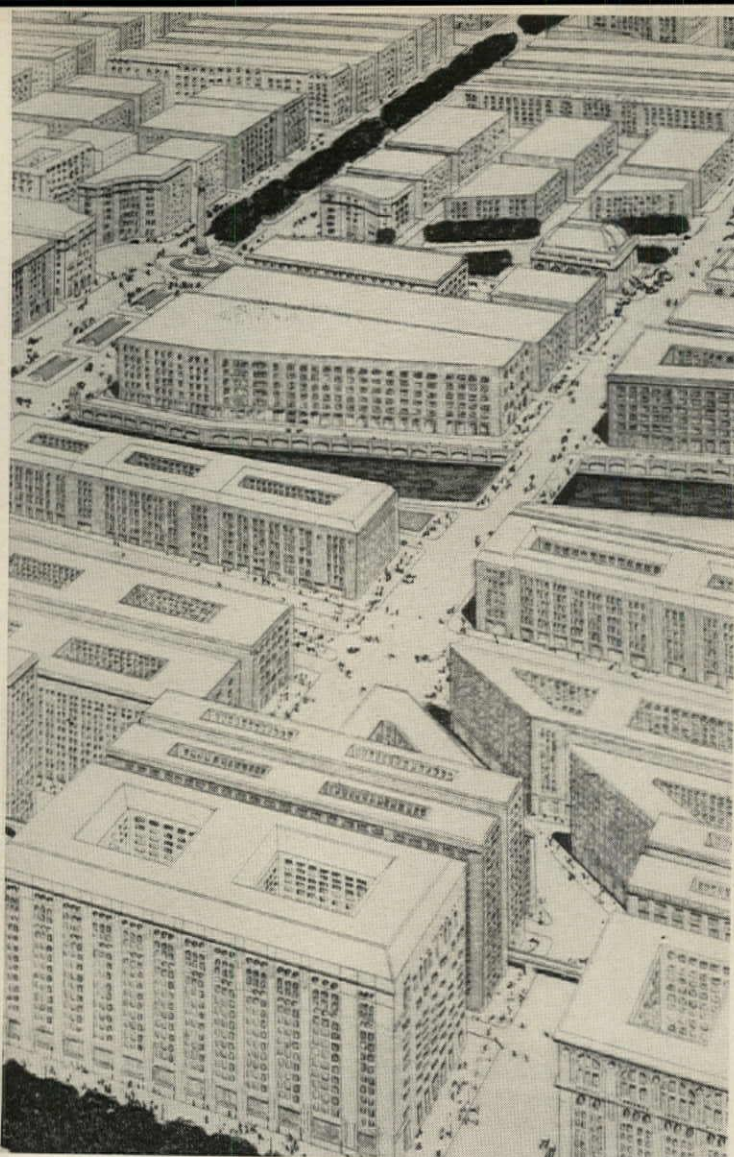
Working in the penthouse, in addition to his planning associate Edward H. Bennett and his Chicago staff, were two Frenchmen, Jules Guérin and Fernand Janin, who were engaged to prepare the exquisite renderings of the final report.

When the plan was unveiled at a luncheon session of the Commercial Club in June, 1908, it was evident that much more than a grand lake-front plan had been prepared. The plan, indeed, dealt with the development of the whole region within a 60-mile radius of the city center. It proposed a whole new network of streets and highways, on a pattern of radials and diagonals, anticipating to a surprising degree the system of superhighways now being built—but without their attendant scale and complexity. It proposed the relocation of rail terminals and the building of a subway loop

to connect them. It set down a system of outer parks and boulevards, including forest preserves, and it showed the development of a 20-mile-long lake-front park system on filled land in Lake Michigan. In the Loop and just beyond, it organized a quadrangle of major streets consisting of Michigan Avenue on the east, Chicago Avenue on the north, Halsted Street on the west, and Twelfth Street (now Roosevelt Road) on the south. At the intersection of Halsted and Congress Streets (where the University of Illinois is now planning a Chicago campus), the plan proposed a grand Civic Center, with a huge, domed central building to tower higher than any other Chicago building to mark the center of the city from afar. On the lake shore, flanking the axis of Congress Street and the Civic Center, the plan proposed a park and inner harbor development, enclosed within great causeways which reached a mile out into the lake.

Although the plan stirred the imagination of the city, and Mayor Fred Busse appointed a 328-member planning commission to see to its execution, it was two men, in fact, who put it over: Charles H. Wacker, a wealthy brewery heir who retired at the age of 50 to devote full time (until 1926) to the post of chairman of the Chicago Plan Commission, and the managing director, Walter D. Moody, who surely must rank as one of the consummate publicists of all time.

Establishing a command post in the Sherman Hotel across from City Hall, the pair proceeded to barrage the city with publications urging the support and development of the plan. In 1911, with the plan still not official, a publication was issued addressed to the "Owners of Chicago" entitled "Chicago's Greatest Issue: an Official Plan." Also in 1911 came the



Regular blocks of uniform height were advocated, and largely realized

publication called "Wacker's Manual of the Plan of Chicago" which for nearly three decades was a textbook in the Chicago School System. In 1917 came the report "War and the Chicago Plan" followed by one titled "Reclaim South Water Street for All the People!" In the foreword to this publication, Moody wrote: "Frown upon unnecessary delays. Hold your representatives responsible for indifference and dilatory tactics." This drum beating was not only characteristic, it got results: e.g., South Water Street is now Wacker Drive.

Pushing the plan

This propaganda was not all. Wacker and Moody pushed the plan project by project, using popular ones as an entering wedge. First came the Michigan Avenue widening, then the Twelfth Street construction, then the completion of the quadrangle of streets outside the Loop. First also came the lake-front parks north to Lincoln Park and south to Jackson Park, then the development of the formal plan of Grant Park, then the linkage of the whole system by the Outer Drive. This procedure took time, but it was sure. By the time the bridge across the Chicago River was built in the early 1930s it was politically unwise to do it in any way other than that anticipated in the plan. Up through World War II, the Chicago Plan came right after God, Mother, and Country in Chicago politics.

But after World War II, with the coming of urban renewal, expressways, and the full boom of the statistical school of city planning, the Burnham Plan became less and less a factor in Chicago's development. Indeed, it is now viewed in a self-conscious and critical way.

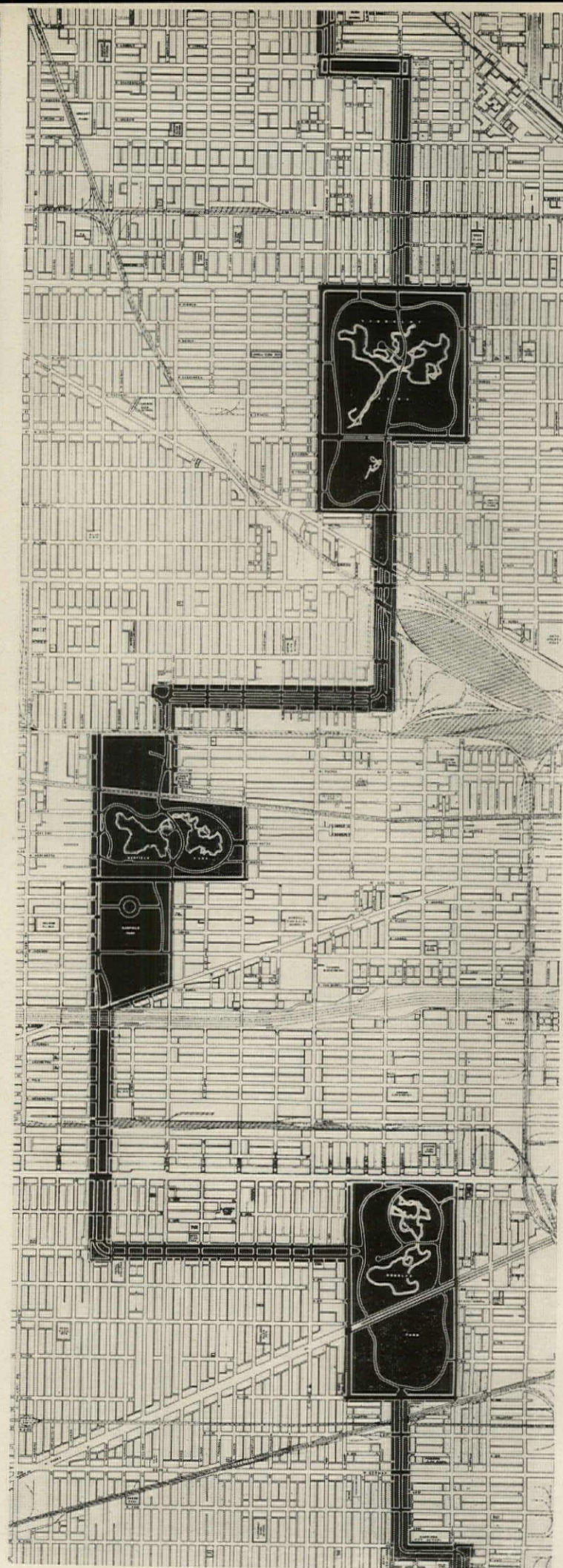


PHOTO OPP. ROBERT KELLEY—LIFE

A system of parks and boulevards converted portions of the city's unrelieved grid. Turning on traffic squares or school sites, the boulevards connected a sequence of ro-

mantic landscaped parks to form a ring around the central city. Unlike the radial and axial pattern of the main-street system, these were strongly asymmetrical.



Rapidly developing as the grand achievement of the Burnham Plan is double-decked Wacker Drive, with quays below and skyscrapers above

Taken fresh and viewed creatively, however, the Burnham Plan remains a remarkable document—one that Chicago, or any city, could still find instructive. In the abstract, the plan reveals a city texture, and it is this texture that is important, forgetting the specific expression in streets and buildings. The texture is most clearly evident in the little-known park and boulevard system that rings the inner city. The plan, indeed, is a kind of net, with open spaces at major intersections and streets that stretch without closure toward the lake or out to the prairie. There is a kind of classic hierarchy of spaces in the plan, from the grandeur of the Civic Center to the intimacy of a neighborhood park.

Similarly classic is the concept of a uniform cornice line for buildings, a concept which was built into the zoning ordinance of 1923 (in contrast to New York's ziggurat ordinance of 1916) and which has had much to do with the development of the canyon-like streets that characterize the Loop. It is a distinct feature of Chicago and accounts for the fact that Chicago buildings are different than New York buildings or buildings anywhere else.

Some visions and failures

The Burnham Plan anticipated so much that it is almost odd to note the developments it did not foresee. Major among these is the failure to see the city as an organization of smaller communities. In the plan, suburban developments stretch without distinction to the edge of the forest reserves and the system of parks is more a system of routes and paths than a system of centers for neighborhoods.

But in another respect, the plan was remarkably ahead

of current practice. The multilevel development of the Loop streets, represented today in Wacker Drive and Michigan Avenue, anticipates considerably the vertical separation of several kinds of traffic. It need only be taken one step further (as in the Columbia University plan for Dallas, page 42, which separates pedestrian from vehicular traffic by further development of multilevels) to be suited to intense modern-day development in the Loop.

But the failure on the part of Burnham's successors to realize many of the opportunities in the plan is still evident in Chicago. A most striking example is the City Planning Department's struggle to get at least a modicum of rational development on the Illinois Central air-rights site (page 117).

In the new buildings in the Loop, where the Burnham Plan has produced a setting (as in the new Equitable Building on the river front at Michigan Avenue), the contribution of the new to the old promises to be exciting indeed. But elsewhere, where the plan did not venture, the results are mixed. There is, for example, no indication that the plaza at the Federal Center and the plaza at the Civic Center will be linked to each other in any designed way. And unfortunately, there is little indication that new developments in the Loop will do anything but make chaotic the now orderly, if congested, streets. Drastically needed is a system of plazas and pedestrian ways riding above an extended multilevel street system, adding a dimension to the hierarchial texture of the original 1909 scheme.

The power of Burnham's Plan of Chicago "to stir men's blood" remains. But its long-forgotten tradition needs to be recreated in our time.

RICHARD A. MILLER



AIRPIX

A NEW RAGE TO RECONSTRUCT CENTRAL CHICAGO

"Chicago's physical growth in buildings has . . . proceeded . . . by fits and starts. Periods of feverish activity in which the whole city seemed to be possessed with a rage to reconstruct its business center . . . were followed by periods in which the new growth was . . . almost imperceptible."

So wrote Homer Hoyt in his amazing book, *One Hundred Years of Land Values In Chicago*. Hoyt's book was published in 1933, and now Chicagoans could use a sequel. For after 20 years of almost imperceptible growth (from 1933 to 1952 building activity was centered almost entirely in new industrial structures and luxury apartments on the North Shore Gold Coast), Chicago is well into what appears to be the city's sixth great, historic building boom—and one which promises to eclipse all its predecessors in terms of volume, vigor, and perhaps even in contributions to building art.

Probably the major reason why Chicago seemed not to be doing any building after World War II was that there was almost no activity in its aging central business area. Despite the nation's biggest factory boom on the South and West Sides, and the North Side apartment splurge, downtown was as dead as prohibition.

Some said it was because Chicago was badly stung by the depression—but what city wasn't? Some said Chicago was just naturally sluggish, and wouldn't move until eastern money men pushed it off dead center. Others just said that the once vigorous city of Chicago had had it.

It is obvious by now that Chicago has not had it—and it did take some eastern money men to help get it moving. Whatever the reasons, Chicago now is moving fast.

Economist James Downs, who heads Real Estate Research Corp. and is also Mayor Richard J. Daley's construction adviser, believes that "Chicago is one of the first cities capitalizing on recentralization—the highest percentage of the metropolitan area's building is now going on within the city limits."

This sort of keen awareness of what Planning Commissioner Ira Bach calls "the Inner City" is beginning to pervade Chicagoans' thinking, and is a pivotal factor in decisions of where—and what—to build. Bach, who is in the midst of preparing a general plan for city development, is a booster of centralization, and believes that the city's recently announced Civic Center building—a 630-foot tower of courtrooms across the street from City Hall in the heart of the Loop (page 97)—will be a major factor in promoting urban concentration, and in generating new construction downtown. Bach says: "In developing a general plan, we must look at the city as if it were going to be entirely rebuilt—because a healthy city naturally rebuilds itself in the long run."

A downtown plan, in the Burnham tradition

Bach pointed the way to recentralization of Chicago in 1958 when the Planning Department announced its plan for development of the central business area—a rectangle stretching from North Avenue down Halsted Street on the west, to Twenty-third Street (roughly as far south as McCormick Exposition Hall) and east to the lake. The plan also included the West Side areas currently being cleared for industrial re-use and a \$150 million Chicago campus for the University of Illinois (page 120). The downtown plan was not entirely



Planner Ira Bach



Builder Arthur Rubloff



Architect Bertrand Goldberg



Economist James Downs

a spontaneous notion of the Planning Department. It was conceived largely because the city realized it was important to keep its downtown from being pulled apart by a massive array of forces, such as the shift of population, industry, retailing, and other commercial facilities, to the suburbs. And in the great tradition of Burnham and the Commercial Club, the plan was boosted by a group of downtown business leaders calling themselves the Central Area Committee, formed in 1956 to establish and carry out broad-gauge objectives for downtown development.

The initial impetus for both the Central Area Plan and CAC came in 1949 when real estate developer Arthur Rubloff proposed a plan—the Fort Dearborn project—to build a \$450 million complex of residential and commercial facilities, as well as a city civic center and federal buildings, just north of the Chicago River, in an area then badly obsolescent. After spending a great deal of time (and, he estimates, \$100,000) Rubloff at least succeeded in forcing the city and other downtown business leaders to think about their problem, and when they thought about it, they decided against Rubloff's Fort Dearborn project and, instead, developed the Central Area Plan which is currently the official general development scheme. Rubloff, although stung by the rebuff, has not brooded. He has snapped up a downtown site, adjacent to the Civic Center, where he is building the \$35 million Brunswick Building (page 96), which he says cockily "will rent better than any building in Chicago." Rubloff takes credit, and perhaps justifiably so, for getting the city and downtown leaders to realize they must do something downtown to compete with the suburbs. By now they fully realize that this planning involves all elements of city dynamics—transporta-

tion, efficient land use, recreation, education and cultural facilities, and the overall problems of obsolescence.

New office space: a vital necessity

Since the Central Area Plan was announced, there has been a great deal of building in Chicago's central business area. More important, that most glamorous structure, the office building, is sprouting again, in the Loop and on its fringes. Chicago has always been touchy about being second to New York in anything, but is especially defensive about its failure to build new office space after World War II at anything like the scale of New York. (Until the Prudential Building was finished in 1955, Chicago had built a total of less than 1 million square feet of net rentable office space since 1947. In the same period, New York built 10.7 million square feet. Indeed, since 1947, New York has built almost as much office space—44 million square feet—as Chicago has in its whole office space inventory.)

Today, Chicago's office boom is, in many respects, the central element in the city's building surge as well as the key to its economic future. Moreover, this resurgence of office construction is already showing signs of self-generation, as there is a growing realization by some staid Chicagoans that new space is not only desirable for prestige reasons, but that it is necessary to compete for a high caliber of office help.

The Prudential: Chicago's icebreaker

The 41-story Prudential building is by all odds the starting point of Chicago's downtown boom. But there were moments when it seemed that even this first venture into new office building might not succeed. Realtor Leo J. Sheridan, who acted for the Prudential in a three-year negotiation to get the

air-rights site from the Illinois Central Railroad, says that "there was great concern over whether Chicago would pay rentals for new space tied to the current cost of building." The Prudential was proposing to rent 650,000 square feet of modern office space for about \$6.50 per square foot. And Chicago, Sheridan says, "had always been a \$4.50 tops town."

The customers not only paid \$6.50 (although it took three years for Sheridan to rent out the top three floors at \$7.00 per square foot) but the Prudential completely opened up the office market in three other vital respects:

- ▶ It boosted rentals on many other buildings, and put the market for new space on a realistic basis.
- ▶ It proved that Chicago would pay going prices for new office space.
- ▶ And, most important, Prudential arrived at a time when some companies were thinking of moving out of the central area, and convinced them to stay on the grounds that there would be a stronger market for modern space. As Sheridan says, "The Prudential broke the ice. It is doubtful that all of the subsequent buildings would have been built if Prudential had not established these things."

A cautious boom, but still young

Since the Prudential was built, an additional 3 million square feet of net rentable office space have been erected in the central area, and a study of the market for office space indicates that another 13 million square feet will be built between now and 1980. (Some of this space is already under construction or planned.) The study was done for the City Planning Department about two years ago, and some Chicago real estate observers feel it is too conservative. But Downs, whose corporation did the study, thinks it is still on target and points out that this is a lot of space by any standard, outside New York.

Downs, who probably knows Chicago's market situation

better than any man, is a cautious optimist, despite the city's current building spurt. "Chicago," he says, "is a conservative, management-dominated city. The depression fired up this conservatism so that no major building was done until the Prudential came along."

Others are still cautious, too. Rubloff, who is certainly not afraid of big ideas (besides Fort Dearborn, he promoted the so-called Magnificent Mile on Michigan Boulevard), calls Chicago "a lethargic city," and by way of illustration likes to say that although there is a great deal of building now, "about 80 per cent of the buildings in the Loop are obsolete and should be demolished, but nobody has the courage to go ahead and start it." Except, of course, Rubloff, whose Brunswick Building is almost in the center of the Loop.

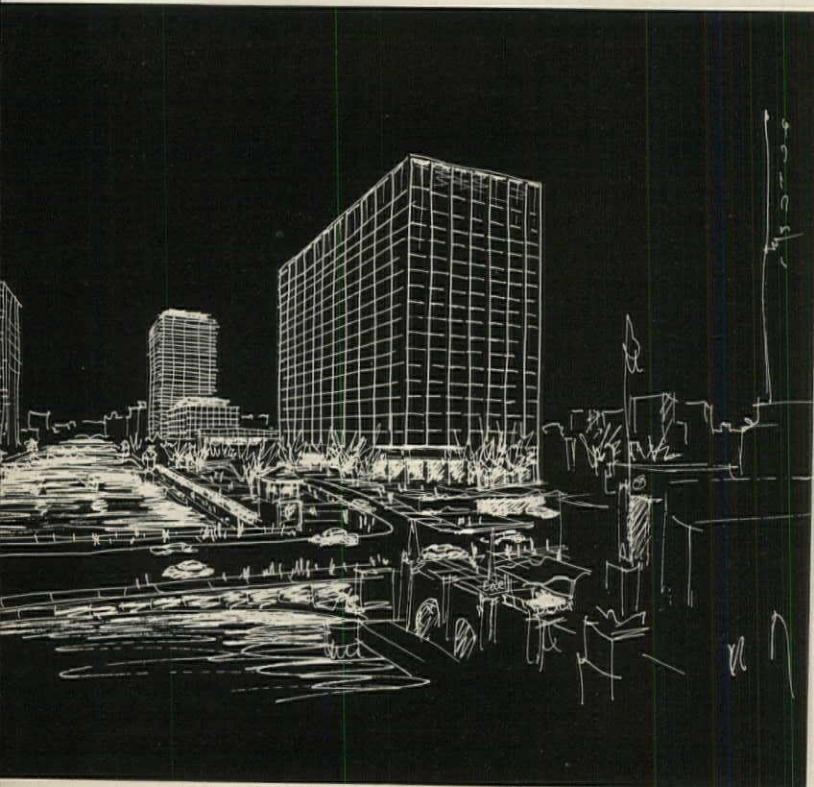
The great air-rights scramble

Rubloff's point about demolition bears further examination, for one of the fascinating elements about Chicago's building boom is that so much of it has been on vacant—or nearly vacant—land. There has been little demolition, and, in fact, there is a great aversion to it, on the grounds that it is a) too costly, and b) prohibitive in time spent assembling land already developed.

Forming a rough crescent around the northern, western, and eastern end of the Loop area is a whole series of proposals and projects to be built over air rights either bought or leased from the railroads:

▶ On West Wacker Drive, just across the south branch of the Chicago River from downtown, will rise a group of three buildings, to be developed by New York Builder Erwin Wolfson (with his British partner, Jack Cotton). The first of these, with about 680,000 square feet of rentable space, will be a \$20 million, 20-story office tower designed by Skidmore, Owings & Merrill.

▶ Where the river branches, at Wolf Point, a group including



FLANKING DOWNTOWN, Chicago is building on its open areas over railroad rights of way. Just west of the south branch of the Chicago River, New York Builder Erwin Wolfson will build a \$20 million, 20-story office tower with a plaza running along the river, just south of Union Station (left).

TO THE EAST, (opposite page) ambitious plans are proposed for the city's choicest site. All plans so far contemplate development of various air-rights parcels of the huge 60-acre Illinois Central freight yards and terminal, bounded by Randolph Street, the river, Michigan Avenue, and the lake. Of this site, the City Planning Department says: "Its prominence and its singularity place an obligation on the city and on the private developers to see that its unprecedented opportunities are not lost." The planners have been working with three developers at least to strike agreement on common service facilities (parking, access

roads, recreation). They propose that all the buildings rise atop a six-level common-service platform. The first building on the site (right) will soon be under construction. It will be a 42-story, 939-unit apartment (Architects: Hirschfeld, Pawlan & Reinheimer) with rentals from \$150 for studios to \$370 for two-bedroom units. The building, as well as the whole lake-front portion of the site (2) is under the control of Jupiter Corp., which, if it exercises its options for other parts of the site, would build a hotel or office buildings. Meanwhile, a group calling itself Illinois Center Corp. has an option to buy site (1) directly behind the Prudential Building, and has already proposed four huge apartment towers. And site (3) is under option to Metropolitan Structures, Inc., for whom Skidmore, Owings & Merrill has prepared a plan calling for several apartment towers. About 68 per cent of the three sites is slated for apartments.

the Kennedy family, owners and operators of the adjacent Merchandise Mart, is proposing to build additional exhibition and office space (to give the mart large, modern exhibit areas); but the most striking feature, in the proposed design by Pace Associates, would be a round 80-story apartment tower.

▶ Marina City is rising only four city blocks from Wolf Point, and most Chicagoans agree that it is "the most exciting thing now happening in Chicago" (page 100). Besides the twin parking-apartment towers, Architect Bertrand Goldberg has designed commercial facilities under the platform on which the towers sit. In addition, Marina will have a small office building with about 310,000 square feet of rentable space, and a 1,250-seat theater.

▶ Adjacent to Marina City is the site for a projected \$75 million apartment project, designed by Architects Shaw, Metz & Associates.

▶ Just across Michigan Boulevard, on the north bank of the river, the Equitable Life Assurance Society will build a \$30 million, 35-story office building, designed by SOM (page 96).

▶ The most ambitious air-rights projects of all, however, will be located on the vast, 60-acre site over the Illinois Central's freight yards and terminal between Randolph Street and the river, and stretching right to the lake front. (See below, left, for details of these projects.) Farther down the lake front, the I.C. has already sold two parcels of air-rights land, not far from the McCormick Exposition Hall, for a motor hotel and other commercial buildings.

The air-rights proposals are, in many respects, the most portentous of all building developments in the city. If they are all executed, they point toward a new orientation of the downtown toward water—in the direction of the main stream of the river itself and eastward toward the lake front. For instance, if the Illinois Central air-rights site were to be developed to its fullest over the next 15 to 20 years, it would represent a new focus of concentration; Planning Department

studies indicate that some 15,000 units could be built there, plus 1 million square feet of hotel space and 5 million square feet of office space. This would comprise over one-third of the anticipated market for office space for the next 18 years, as well as nearly half the market for apartments in the whole central area.

"A few Yellow Kid Weils—with honest intent"

Why the rush to build on air rights? A major reason is land price. Loop land, particularly around State Street, costs from \$100 to \$125 per square foot. By contrast, land at Marina City costs \$19 per square foot and land over the Illinois Central tracks near the Prudential costs from \$27 to \$35 per square foot. Wolfson is leasing rights from the Pennsylvania Railroad, which first approached him about developing its Chicago air rights, for a tidy \$110,000 per year or 8 per cent of the gross, whichever is higher.

That developers like Wolfson, and the Texas oil interests investing in the I.C. site, are now seeking investments in Chicago real estate is a most encouraging sign. For one thing, Chicago has few home-grown entrepreneurs of Wolfson's daring or savvy. (Rubloff, who probably comes closest to the New York type of building entrepreneur, has become a worldwide operator and does not restrict himself to Chicago.) James Downs points out that "the investment builder, as opposed to the institutional builder (e.g. Prudential, Inland Steel, Harris Trust, U.S. Gypsum), has not been a big factor so far in the city's office building boom." This is again traceable to a certain conservatism in the city, Downs believes, and he puts much of the blame for this lack of enterprise on Illinois' antiquated banking laws, which forbid branch banking: "Entrepreneurs don't find any kindred souls here, there are no gamblers. And the city needs this kind of dynamism. It could use a few Yellow Kid Weils—with honest intent."

Whether Chicago can become a grazing ground for some

FAIRCHILD AERIAL SURVEYS, INC.



Yellow Kid Wells or not, all the city's leaders realize that the city must rebuild its downtown and must recentralize if it is to survive. Marina City, the various other air-rights developments, and the concentration of government facilities in the Loop are not just happenstance—they are an absolute necessity. Fortunately, so far, Chicago's market, long starved for good commercial and apartment space, is responding well, and the few soft spots (e.g. the Hartford Insurance Building on West Wacker Drive is still renting slowly, probably because it was the first new major building in an area a little off the beaten path, and because it is expensive space) are expected to pick up as more new space is generated at high rentals.

The principle of living above the store

The awareness of Chicago's battle for survival against its own suburbs—and, indeed, the other great cities of the nation—is felt by the city's building leaders. Architect Goldberg, a lifelong Chicago resident, is a firm believer in centralization and in-town living tied closely to in-town working, or what he calls "the time-tested city principle of living above the store." Marina reflects Goldberg's feelings fully, and the fact that there have been more applications for apartments than can be accommodated seems to justify this belief.

Although few of the applications at Marina City have been from suburbanites (the apartments are relatively small, and geared to a population of 45-to-60 year olds whose children are grown) there is great hope that Marina and other downtown developments will lure suburbanites back to the city. (If all the elements of the Central Area Plan are executed, Downs predicts a housing market for 47,000 apartment units in the central area.) But, as Zarko Bilbija, City Planning Department economist, says, "the problem is not so much to lure them back—that seems like wishful thinking at the moment. The problem is to prevent them going to the suburbs."

Bilbija, who has studied the city's economic base intensively, outlines the city's dilemma like this: "The city has declined economically, it is on the way down. It has lost population, wealth, and income to the suburbs. The 15 per cent of the city's labor force which lives in the suburbs owns 20 per cent of the incomes which originate in the city. The net gain the city gets from them is the money they spend for lunch."

Just as important as the loss of income is the loss of leadership to the suburbs. The great rebuilding effort needs more of the absentee leadership now residing in Wilmette and Glencoe, and there are some signs that at least a compromise might be struck: some civic leaders have continued to live in the suburbs but have established city residences, too, so they can serve on municipal boards.

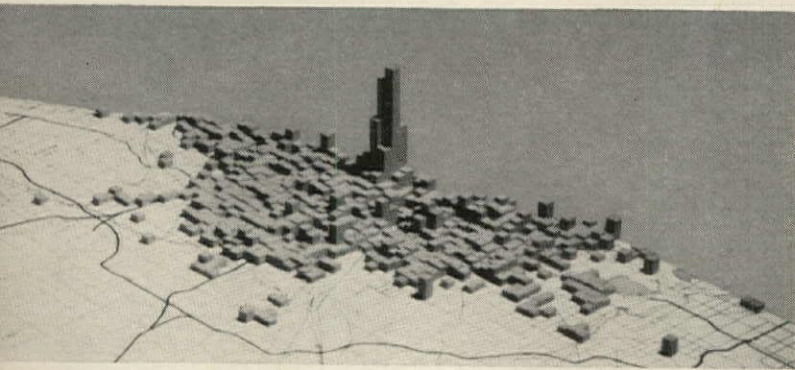
Planning for new types of industrial growth

The immediate target, however, is industry. Bilbija estimates that the city has lost about 100,000 jobs since 1954 as a result of industry moving out of the city either to the suburbs or away from the area altogether. The great industrial building boom—over \$2 billion of new factory space—which started with World War II and made Chicago a prime industrial center seems to have ended in 1957.

Downs and other close observers of the city's economic patterns believe the city has to generate a market for different sorts of industry than Chicago has had. The bulk of the job loss has come in durable goods manufacturing, in which Chicago has long been a leader. Now the city must try to gear itself to an economy structured increasingly about service industries, and must attempt to develop a market for more higher-paying industrial research jobs.

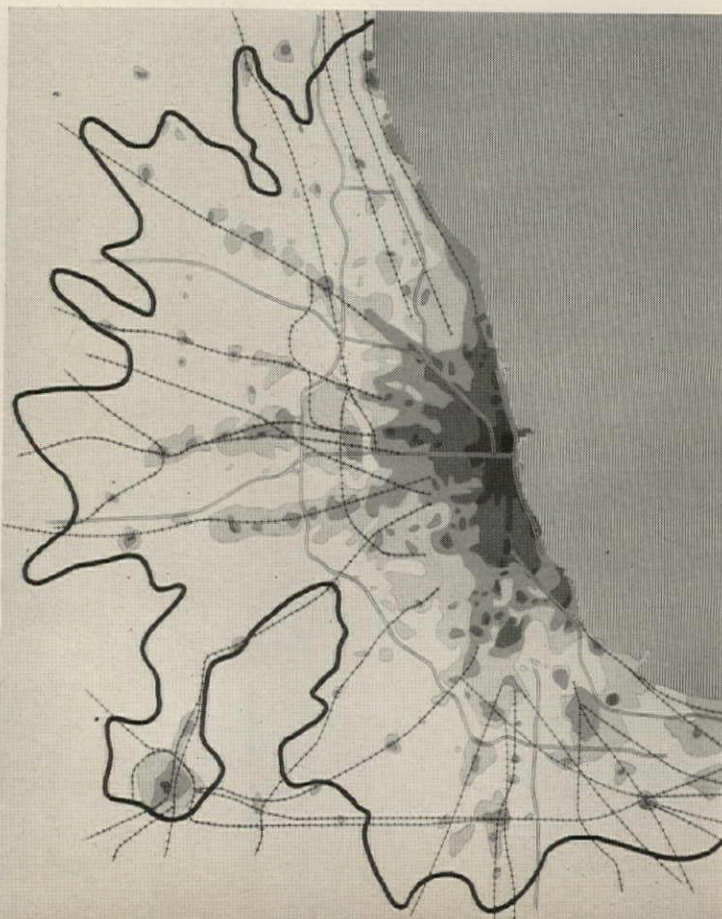
So far, some of the loss represented by the departure of the meat packers and electronics manufacturers has already been made up by the emergence of Chicago as the great

continued on page 203



CHICAGO'S GROWTH, vertical and horizontal, can be seen in these pictures. Above, the total floor area of the city, with each block representing the area in every quarter square mile grid. At its highest density, in the Loop, there are 32 million square feet, and this concentration will grow as today's buildings, and those already planned, compress Chicago's central area further. At the same time, the city is exploding toward the prairie at an accelerating rate, as the

growth chart (right) shows. Starting in 1830, with the earliest developments around Fort Dearborn (darkest shading), the city has stretched fingers westward, following the building of rail lines. The lightest shading, stretching farthest away from the city core, indicates post-World War II population growth, and the heavy line shows how the most tremendous push of all—up to 1980—will spread another 3 million persons over a 1,000-square-mile crescent.



SOURCE: CHICAGO AREA TRANSPORTATION STUDY



A. FEININGER—LIFE

SLUM BLIGHT: CHICAGO'S NUMBER ONE TARGET

Even before Richard J. Daley became mayor in 1955, Chicago had staked its claim as the urban renewal laboratory for the nation. In the seven years since then, Chicago's right to that title has become practically indisputable due, in large measure, to the fact that Daley has made urban renewal the principal mission of his administration.

The need for urban renewal in Chicago was enormous. Vast areas on the South and West Sides had turned into some of the country's bitterest slums as waves of uneducated and unskilled newcomers, most of them Negroes from the rural South, swept into the city. And even once-proud neighborhoods, such as Hyde Park and Kenwood, were showing clear signs of deterioration which threatened to turn them into slums also.

Daley himself is the chief tub thumper for renewal: "The purpose of the urban renewal program is not purely economic. It is to provide an environment which will permit our people to enjoy the opportunities that our way of life can and should give to them."

Last month, however, Daley received a major setback in his renewal plans when city voters vetoed six major bond

issues, including \$22.5 million for redevelopment. Daley says that "We will still be able to clean up the slums. This will slow us down a little." The majority of the projects nearly completed and those well under way already have funds allocated. But many conservation areas and planning for other projects will have to wait, at least until the November election. Although the vote generally was interpreted as a tax rebellion, the largest "no" vote was cast against the renewal bonds, indicating that Chicago may well have a tougher time with its future program. As in many other cities, there has been growing opposition to large-scale clearance and relocation practices—one reason why the city is now stressing neighborhood rehabilitation and conservation.

Minimizing land clearance

Since 1947, when Chicago's urban renewal program had its start, 26 clearance projects have been undertaken at a net cost of \$121,500,000 (under the standard 2 for 1 dollar-matching arrangement with the federal government). These projects, encompassing 928 acres and involving the relocation of 43,000 persons, will be completed by 1965.

Thus, while many big cities are just beginning their major clearance efforts, this first big step in Chicago's program is nearing completion. The emphasis now is shifting toward the second phase of the attack, neighborhood conservation. John Gorman Duba, 40-year-old Commissioner of the new Department of Urban Renewal and former assistant to Mayor Daley, puts it this way: "Our philosophy is to try to conserve neighborhoods before they require major treatment. If we can cut down the amount of land clearance, then the big projects are not necessary and the expense will be minimized."

This is not to say that all the city's slum areas have been cleared, but only that much of the worst is gone. What remains is either not so bad as the South Side slum areas already cleared, or cannot, for political reasons, be treated at this time. There are still several wards where aldermen and their constituents are steadfast holdouts against renewal, as the latest bond-issue vote indicated.

Pushing the city into redevelopment

The city has not always shown such concern for its slums. Like most big cities, the bulk of its effort in the years immediately following World War II was concentrated in a large public housing program to satisfy the fierce pressures for housing. It was soon apparent, however, that this housing, crowded with welfare and problem families and almost entirely occupied by Negroes, was hardly a whole solution to Chicago's slum problems.

Despite the obvious shortcomings of public housing as an agent of slum clearance, the city administration was not at first eager to tackle slums on its own. As real estate developer Ferd Kramer, a leader in Chicago's and the nation's renewal program, says: "Men and institutions pushed the city into redevelopment."

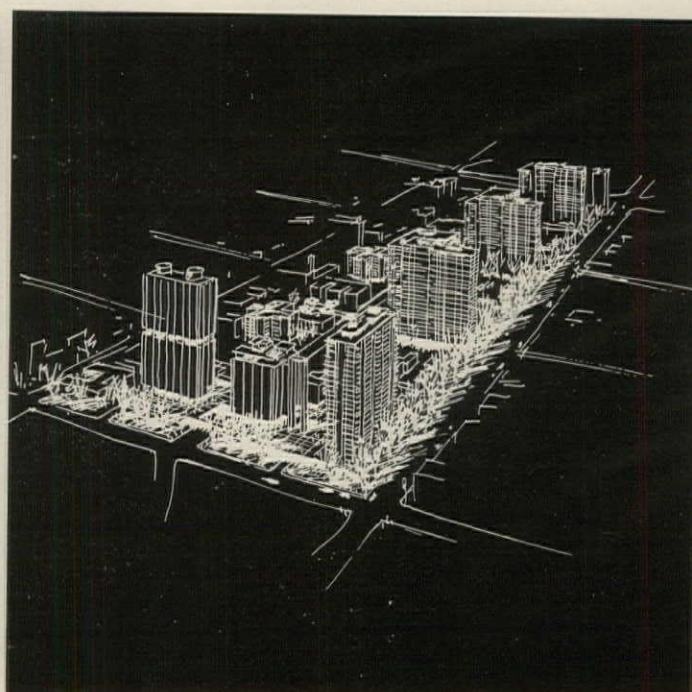
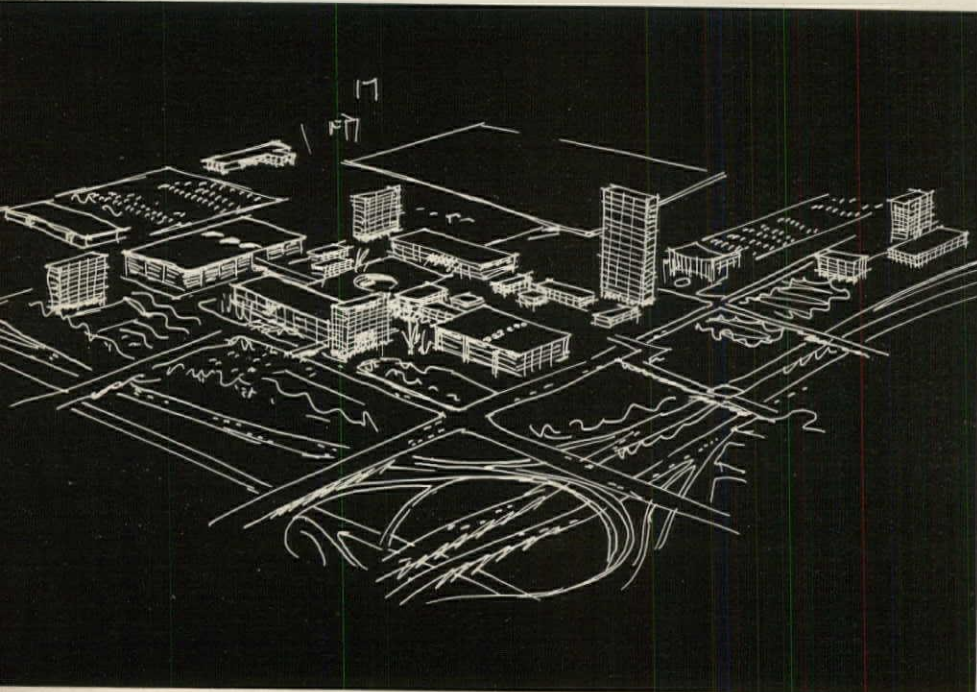
Most of this pushing took place on the South Side, where Negroes had crowded for three generations. Its key institutions (Michael Reese Hospital, Illinois Institute of Tech-

nology, and the University of Chicago) all had decided by the end of World War II to stay in their crumbling environments, basically because their capital investments were such that they could ill afford to move. They also decided to do something about improving their environment since it had begun to put severe qualifications on the value of that investment and on their ability to attract top-notch staff and students.

Michael Reese Hospital began, just after World War II, to build housing for its staff to the north of a dismal slum area, which was later to become Lake Meadows. At the same time, the University of Chicago began planning the broad-gauge rehabilitation of Hyde Park-Kenwood, a once-elegant community threatened with engulfment by the slum areas which bordered it.

Even as an organization to improve the area around the University of Chicago was forming, Holman Pettibone, then president of Chicago Title and Trust, and Milton Mumford, then vice president of Marshall Field, both long-time leaders in the battle against slums, took steps to do something about the vast slum area east of Hyde Park, which had been slated for treatment under federal slum-clearance provisions. After a lengthy period of discussion, the two Chicagoans convinced the New York Life Insurance Co. to build Lake Meadows, a 101-acre, high-rise, low-density project designed by Skidmore, Owings & Merrill. It was the city's first new housing (aside from public housing) in a slum area. Although it was a long, tough fight for New York Life to get the project built (it took five years before the first unit was finished), the company today expresses great satisfaction with the project, and just last year opened a luxury building (rentals about \$53 per room a month). This has rented slowly so far, but it is regarded as a vital start in attaining economic integration on the South Side.

But even if Lake Meadows had been a financial failure (it hasn't been for New York Life Insurance Co., and taxes to the city now are \$565,712 a year compared to \$222,525



before redevelopment), it would be significant for these reasons: 1) it got the city's renewal program off dead center, 2) it encouraged Kramer and other investors to push ahead with Prairie Shores (Architect: Loeb, Schlossman & Bennett), a renewal project with 1,680 units just to the north, and 3) it has a remarkable integration record.

When the first units were opened in 1955, they were open occupancy, and became 90 per cent Negro. The moderate-income units opened in 1960 were only 60 per cent Negro; and 80 per cent of the families living in the new luxury unit are white. At Prairie Shores, the problem has been to keep at least one-third of the project Negro, attesting to the strength of white interest in a truly integrated project.

By the time Lake Meadows was getting under way, the University of Chicago had developed a broad plan of action which involved both land clearance and a program of rehabilitating middle-aged houses. The University also implemented a controversial policy of attempting to stabilize the population so that the community would not become all Negro. Since the University had a past history of using restrictive covenants to keep Negroes out of the area altogether, this new policy caused accusations of "Negro removal" and criticism that the University was trying to insulate itself from the adjacent Negro areas after first establishing a "comfortable quota" of Negroes in Hyde Park-Kenwood itself.

A shifting geographic focus

To date, two clearance projects have gone forward in Hyde Park-Kenwood and a third is planned. Hyde Park "A" and "B" involve a total of 47 acres, most of them in the first area which has been redeveloped by Webb & Knapp (Architect: I. M. Pei) to provide two apartment towers with 540 units, 250 townhouses, and a shopping center. Hyde Park "B" was cleared to make way for 15 new townhouses on a small 5-acre site near an existing school. Planned, but not yet accomplished, is the clearance of a third area, South West Hyde Park, to make way for student housing.

The focus of the city's renewal effort, so long concentrated on the South Side where slums demanded the most immediate attention, has started to shift and at the same time it has broadened. Not only is conservation of neighborhoods becoming the major approach, but geographically the orientation has changed. For instance:

► On the West Side, two major areas are being redeveloped. One is the huge site which will soon be the location of the downtown campus of the University of Illinois (Architect: Skidmore, Owings & Merrill). This will eventually cost \$150 million for a broad range of facilities (see page 120, left). Last month, the federal government approved the first grants for the project, and the city is obtaining the last properties in the Harrison-Halsted project area. As part of the overall strategy for renewal, the city hopes that the University, located at the Congress Expressway circle, will serve as a focus for further West Side redevelopment, just as the University of Chicago and I.I.T. have anchored South Side projects.

► The other important West Side development is the clearing of sites for industry. Although relatively minor in the total program so far, industrial renewal will be a key to the future redevelopment of the city, as a means of strengthening a declining economic base and offering land competitive with suburban sites. The most recent sale of land for industrial renewal brought a price of \$4 per square foot, well above earlier sales, indicating industry's growing interest.

► Also on the West Side, a program is being drawn up to treat the West Madison Street skid-row area, following an intensive study recently completed (FORUM, March '62).

► On the Near North Side, which had received almost no attention in the early phases of the program, a relatively small (34 acres) cleared site will soon contain 1,932 new units of housing (townhouses and high rise) in a plan by Architects Solomon & Cordwell (page 120, right). Developer Arthur Rubloff paid \$9.17 per square foot for land, the highest price paid for renewal land in the city so far, and nearly twice what the nearest competition offered. Rubloff is bullish

continued on page 190

SHIFTING FOCUS of renewal, away from the South Side to other areas, is underscored by the new 140-acre campus for the University of Illinois (far left) to be built on the West Side at Congress Circle, and by the North-La Salle project (left) to occupy 34 North Side acres. This project will eventually put 1,932 new apartment units—in both high-rise and atrium housing—on the city's near North Side, where there is already considerable rehabilitation under way. The pioneer project in Chicago's renewal was Lake Meadows (right). Influential in getting urban renewal off dead center, this 101-acre middle-income project has displayed a remarkable pattern of integration (at first occupied almost exclusively by Negroes, it is now about one-third white) symbolized by the group tennis lesson shown at right.



LEWELLYN STUDIO



Woodlawn's main artery, once a major city subcenter, is a declined but lively business street under the clangor and shadow patterns of the "el"

CHICAGO'S WOODLAWN — RENEWAL BY WHOM?

Too often urban renewal is thought of as a transaction between planners and builders; citizen participation, insofar as it exists, is conceived as support for these programs. This story tells of a Chicago area which has given its own meaning to citizen participation, a circumstance which obviously requires change in renewal practices.

On a mid-March Wednesday afternoon in Chicago's City Hall, five men sat in conference; they were the Deputy Commissioner of Planning, a member of his staff, the Coordinating Consultant on the Community Renewal Program, the head of a local foundation, and a distinguished sociological statistician from the University of Chicago. As members of the Planning Department's social planning committee for Woodlawn—a predominantly Negro area lying just to the south of the University's campus—they were contemplating a proposal they had helped prepare for announcement the following day. The proposal included a program of urban renewal clearance, conservation, and rehabilitation, plus an investigation of illiteracy, ill-health, crime, and unemployment, and a "total" pilot attack upon these problems to be financed by large government and foundation grants.

Asked whether requests or opinion from Woodlawn had guided the social renewal proposal, the Coordinating Consultant said, "There is nobody to speak for the community. A community does not exist in Woodlawn."

Meanwhile, in Woodlawn, some 1,500 delegates representing more than 20,000 members from 102 block clubs, church groups, social clubs, businessmen's committees, youth organizations, and the like, were preparing for a convention to be held a week later, to convert a year's successful experiment in federation (the Temporary Woodlawn Organization) into a

permanent group. T.W.O. delegates were boning up on proposed resolutions ("We will not be planned for as though we were children"), collecting fees, organizing car pools, and attending to all the other paraphernalia of such an event.

"The people there have only one common bond, opposition to the University of Chicago," said the sociologist. "This is a community that reads nothing. The children find no educational incentive in the home."

Meanwhile, in Woodlawn, "truth squads" of clergymen and mothers were compiling data on the contrasting conditions in the Negro schools of Woodlawn and the white schools of adjoining districts. They had paid for looking into white schools uninvited: they had been arrested by the city police. They had continued after they knew the price was arrest.

"This is a port of entry . . . newcomers unfamiliar with city life," continued the sociologist.

Meanwhile, in Woodlawn, the waiters, civil servants, mechanics, beauty shop operators, domestics, postmen, lawyers, dishwashers, truck drivers, stenographers, gas station attendants, busboys, chefs, tailors, musicians, small businessmen, and clergymen who make up the core of T.W.O. had been inventing new techniques to contend with city life. Tenants fighting violations by slum landlords, unable to get anything in the courts but delays, were on "rent strikes." They had picketed several notably unresponsive landlords in their immaculate neighborhoods with embarrassing signs: "Did you know your neighbor is a slum landlord?" They were getting results: corrected violations and rehabilitation.

"It is a transient community," said the staff member.

Meanwhile, in Woodlawn, on the previous evening, the Reverend Arthur Brazier, president of T.W.O., commented to the Reverend Dr. Ulysses S. Blakeley, moderator of the



← Grim fencing at University of Chicago campus now symbolizes town-gown hostility to Woodlawners; they fear they will yet be fenced out of adjoining Midway.



→ Hotels, centers of vice and rackets, date from Columbian fair and the 1920s. T.W.O. proposes they be converted to needed housing for elderly residents.



← Rent strike in slum building is announced with placards reading "No Heat—No Rent." This building got its heat; several others are getting rehabilitation work.



→ Street scene shows the most dismal portion of Woodlawn; T.W.O. will likely ask clearance here with neighborhood relocation for displaced families.

Chicago Presbytery and one of T.W.O.'s founders, "When a white family finds a better apartment, it is called 'upward mobility.' When a Negro family finds one, it is called 'transience.'" Mulling over a long history of city and University studies and pronouncements about Woodlawn, Mr. Brazier went on, "People here are tired of being pawns in sociological experiments. Working under the guidance of T.W.O. much can be done here. Working outside it or in opposition can only be a waste of time and money."

Back in City Hall, the Deputy Commissioner explained how the city expected to carry out social planning for Woodlawn. "We will implement solutions by effectuating coordination among department heads. These top men, I am proud to say, gave up a Sunday morning to the problem recently. They discussed it from nine to one which shows how interested they are. Of course we know the effectuation of any program which emanates from our efforts will rely on dependence on community involvement in effectuating it. They will be given an opportunity to react."

Cross purposes at work

T.W.O. is certainly the most unusual, and perhaps the most significant, exercise in community organization now occurring in the U.S. A district supposedly incapable of any response but apathy or chaos is cultivating hundreds of leaders, insisting on initiative, grasping for responsibility, and rejecting absentee decisions as a solution for its enormous problems. Chicago's planning authorities, meanwhile, have singled out Woodlawn as the city's most abysmal problem area and proposed "total social planning" (their term). The University of Chicago, apparently, has so far ignored the sociological history being made at its doorstep. The University's spokesman on urban renewal, Julian Levi, for example, asserts that Woodlawn is represented by the University-

sponsored South East Chicago Commission which he heads; he also says that he cannot get the citizens of Woodlawn to report to him so much as a building violation, and cites this as evidence of apathy and disorganization.

These exercises in cross-purposes lend extra drama to the T.W.O. saga and will help shape events to come. However the significance of T.W.O.—beyond its existence as a Chicago phenomenon—lies in the story of how it has been organized, how apathy is being transformed to *esprit*.

Every large American city has its "Woodlawns," with alarmingly high crime rates, colored population, and aging buildings. A quarter of Woodlawn's population receives public assistance—precisely the average for Chicago's Negro population as a whole. Physically the district is amorphous; its size varies (from 60,000 to 80,000 population), depending on whose definition of Woodlawn is used. So do its social statistics of other kinds, but they indicate many and serious troubles.

T.W.O. began as a gleam in the eye of three Woodlawn ministers and a priest. "We were watching a community dying for lack of leaders, a community that had lost hope in the decency of things and people," says Dr. Blakeley. "Outsiders consider a place like this a kind of zoo or jungle. Such people may mean well but they choke us. It seemed any effort would be futile unless our own people could direct it, choose their own goals and work for them, grow in the process and have a sense again of the rightness of things."

After investigating numerous efforts at citizen organization, the clergymen settled upon the Industrial Areas Foundation, headed by Saul Alinsky, a Chicago sociologist and criminologist who has made a specialty of organizing working-class neighborhoods. Alinsky uses methods much like those of old-time union organizers and he is a highly controversial figure, much as labor leaders were in their organizing heydays. The clergymen chose Alinsky, says the Reverend Dr. Charles



Solid citizens and well-kept homes are plentiful in the troubled Woodlawn district. Mrs. Viola Scott, above, and Mrs. Rosa Scott (not related) are typical of active members in T.W.O.



Registration pilgrimage in August took 2,300 Woodlawners in a T.W.O. cavalcade to City Hall and dramatized the area's determination to have a say in policies affecting its renewal.



PHOTOS ABOVE: ARTHUR SIEGEL

T. Leber, another of their number, because he emphasized developing indigenous leadership. The project was financed by grants of \$50,000 from Chicago's Cardinal, Albert Gregory Meyer, \$21,000 from the Presbyterian church and \$69,000 from the Schwarzhaupt Foundation.

Late in 1960, two organizers from Alinsky's staff began hunting out the existing organizations of Woodlawn and hanging around record shops, newsstands, taverns, and pool-rooms, seeking out natural leaders and bringing them together. The work moved slowly until T.W.O. got a sudden assist from the University which decided to press for its South Campus urban renewal project in Woodlawn. Suspecting that this was a precursor to large-scale clearance—a process with which many Woodlawn residents have had prior experience in former neighborhoods—a group of Woodlawners (T.W.O. says fifty, the Commissioner of Planning says “hundreds, you might as well say a thousand”) turned up at a City Planning Commission hearing and won a complicated point to force the rewriting of the ordinance in question. As a sequel, the newly born T.W.O. speedily formed a planning committee to bargain with the city and University on urban renewal.

A taste of victory

The next major event, in the spring of 1961, was a “Square Deal Campaign”—a goal chosen by the growing indigenous leadership—to combat cheating by supermarkets. Squads of shoppers detected short weights and fraudulent additions. The most notorious offender was boycotted; the day he got his scales and totalizer readjusted (he was cheating \$1,000 worth a week on the fraudulent totalizer alone, T.W.O. claims) was a day of satisfying victory—the more so because civic victory in Woodlawn, for homemade aims, was a new experience. But the big turning point—the transformation of T.W.O. from a struggling hope to a force—occurred on August 26

during registration period, when 2,300 persons in a cavalcade of 46 chartered buses made a registration pilgrimage to City Hall. This event so alarmed the local political machine that its workers stood beside buses, warning those who boarded that they could expect no favors. Over and over came the answer, “We aren’t asking favors. We just want our rights.”

As the only guarantee of long term independence and vitality, indigenous financing is being developed along with indigenous leadership. As the first steps, membership contributions are paying the \$125 monthly rent for headquarters in an old store front, and membership fees paid for the \$2,000 costs of the March convention, held in the grand ballroom of a Woodlawn hotel. The next steps will be to raise money for refurbishing and furnishing headquarters, then for hiring a regular secretary. Finally the responsibility for paying other staff members will be assumed—one at a time. The paid staff, financed by the grants, now consists of four organizers.

The proposal for Woodlawn’s renewal issued by the Planning Department in March bears on its cover in large red letters, “For Discussion Purposes Only,” an oblique recognition of T.W.O. Mayor Richard J. Daley made the recognition explicit by appearing at T.W.O.’s convention and promising thorough discussion. If initial responses from T.W.O. are any indication, the plans will be thoroughly changed. Meantime, it may well be of wider interest to know what a community like Woodlawn says when it finds a voice. At the March convention, delegates resolved that all housing programs be based on the principle of self-determination by and for the people of the community instead of “for the benefit of big, outside, irresponsible commercial and institutional interests”; that “public housing ghettos” be opposed; that slum housing be fought by “rent strikes”; that pressure be used against segregated schools and job discrimination; and that “if we need help, we will ask for it.”

JANE JACOBS

The background of the page is a sepia-toned photograph showing the intricate steel framework of a large building under construction. The image captures the complex network of beams and girders, with some architectural details like windows and decorative elements visible on the right side. The overall tone is historical and industrial.

3

A CONTINUING TRADITION IN

CREATIVE TECHNOLOGY

"We decided to build a building that would do steel proud and do our city proud," said Inland Steel President Joseph Block when his new office building was opened in 1958. His enthusiasm for things technological was nothing new for Chicago: almost every major structural building concept in use today existed in Chicago as long as 70 years ago.

Best known are the skyscraper frame and the glass-and-metal wall (pages 126-131), both quite commonplace in the Loop by 1890—both quite commonplace everywhere today. Equally well-known are Frank Lloyd Wright's early use of raw, unfinished concrete at Unity Church in Oak Park, in 1906, and the 1908 glass-and-concrete warehouse for Montgomery Ward, designed and built by Schmidt, Garden & Martin.

But even that much-maligned World's Columbian Exposition of 1893 was full of technological marvels: however fake the exhibition buildings looked on the outside, the great steel vaults of the Manufactures Building were anything but fake. And the fantastic Ferris wheel in the amusement area, and such giant machinery as the huge Bethlehem steam hammer (the largest then extant)—all these were evidence of a continuing love affair between Chicago and technology in all its aspects.

This love affair has never abated; and today, as in the late nineteenth century, Chicago's experiments in building technology (pages 126-141) form a major contribution to our building art.



CHICAGO ARCHITECTURAL PHOTO CO.

"CHICAGO WINDOW"—"CHICAGO CONSTRUCTION"

The two dominant features of the Chicago School of office building were almost entirely the product of a number of revolutionary technical advances and of stiff economic pressure. There was very little architectural theory involved.

In the booming speculative market brought on by the fire of 1871, buildings with the largest window area rented most easily. Early in the 1880s, the first large sheets of glass were rolled, making larger panes of glass possible. Soon any large light of glass came to be called a "Chicago Window." In fact, because of today's four- to five-foot modules, office windowpanes were often bigger in the 1890s than today.

As glass size and area grew and buildings became taller,

exterior bearing walls were gradually replaced with cast-iron façades. The newly developed pier and caisson foundations held them plumb on Chicago's silt and sand.

The next step was the steel frame, but this step was not taken at the instigation of the Chicago architects either: the steel frame was given to them by the steel companies, ready to use. Said Sullivan, looking back in 1924: "The Chicago activity in erecting high buildings finally attracted the attention of the local sales managers of eastern rolling mills. . . . The mills for some time past had been rolling those structural shapes . . . for use in bridge work. Their own ground work thus prepared . . . the idea of a steel frame which should

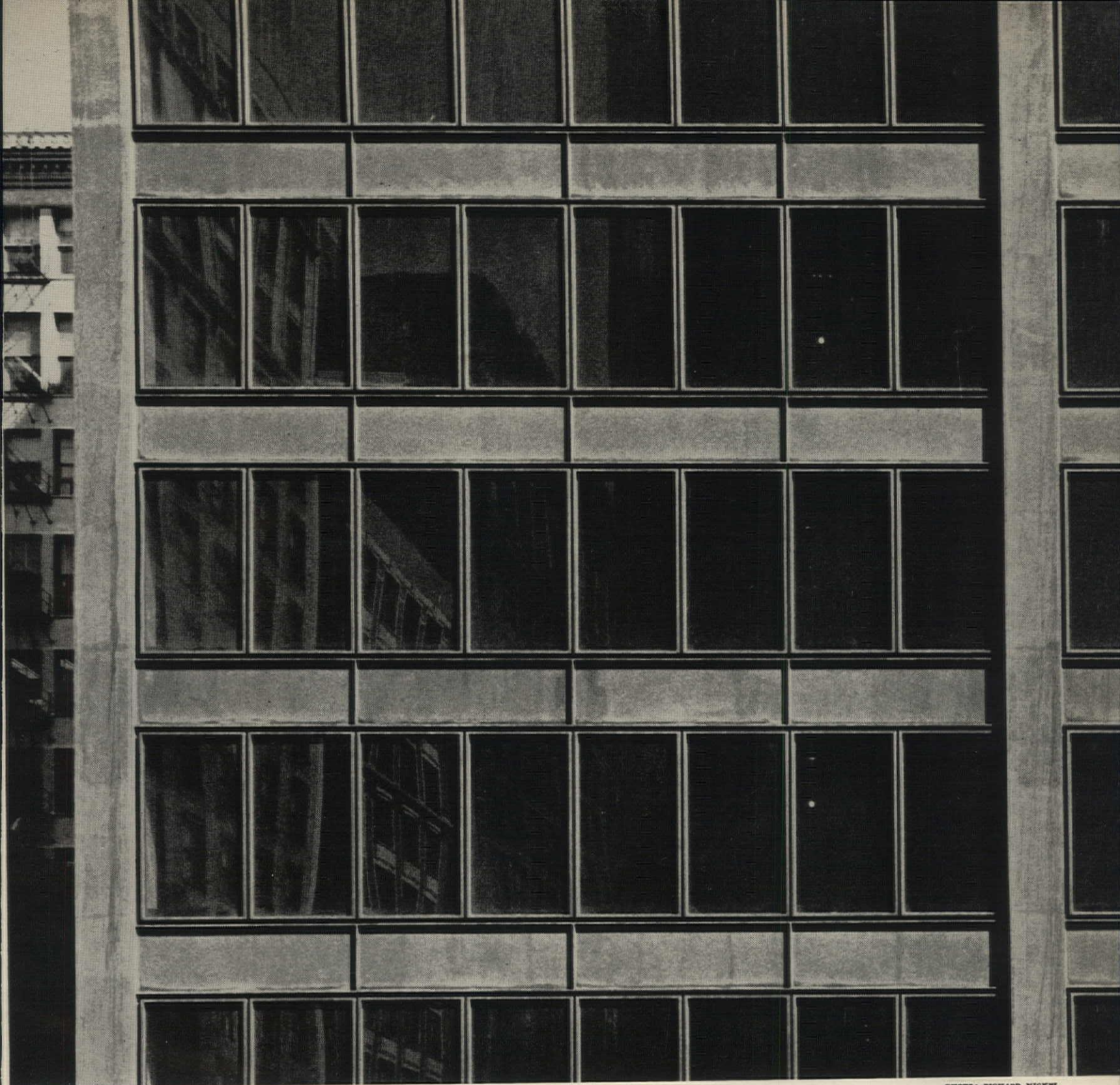


PHOTO: RICHARD NICKEL

carry *all* the load was tentatively presented to Chicago architects."

The first Bessemer beams were rolled in 1884, and, at the request of the Carnegie-Phipps Steel Co. of Pittsburgh, William Le Baron Jenney incorporated them immediately in his Home Insurance Building. (For his trouble, the Bessemer Steamship Company named a vessel after Jenney.)

The steel frame soon became known as "Chicago Construction," and it produced a handful of masterpieces. But with the frame's purest expression—Sullivan's Carson Pirie Scott store of 1900 (opposite)—the movement was virtually over. When the expressed steel frame was faced with the Beaux Arts style, popularized by the World's Columbian Exposition of 1893, it disappeared without a fight. Buildings continued to

be built with steel frames, of course, but the fact was hidden. The idea of "Chicago Construction," however, did not die; it went to Europe and became an integral part of the new architecture on the Continent.

Half a century later, when the expressed steel frame returned in Mies van der Rohe's 860 Lake Shore Drive apartments, it had progressed only a few steps beyond the work of the Chicago School. In the last ten years, however, as the following pages show, the possibilities inherent in "Chicago Construction" and the "Chicago Window" have begun to be explored in earnest; the bay is growing wider by leaps and bounds (see Continental Center, above); the frame is being expressed in many different ways; and, just as steel once supplemented cast iron, concrete is now supplementing steel.

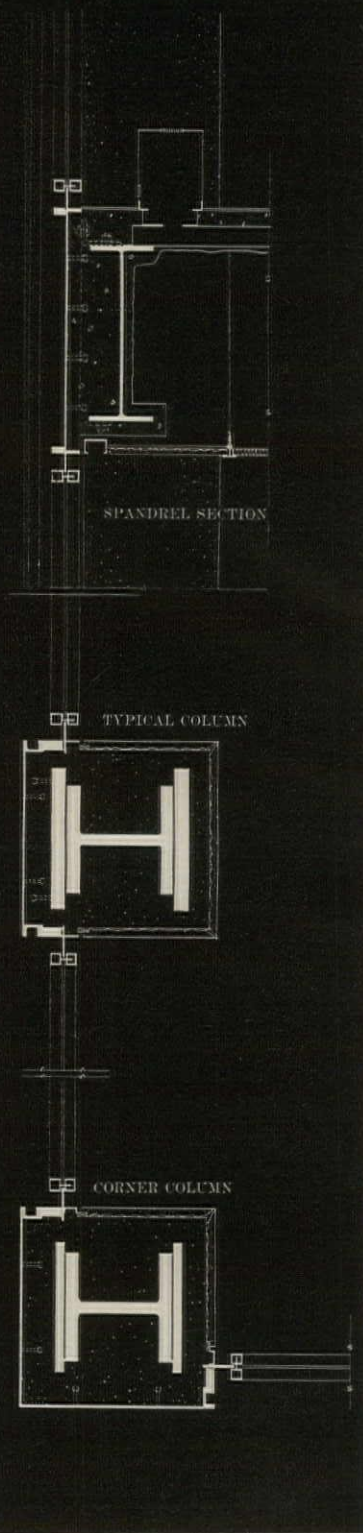
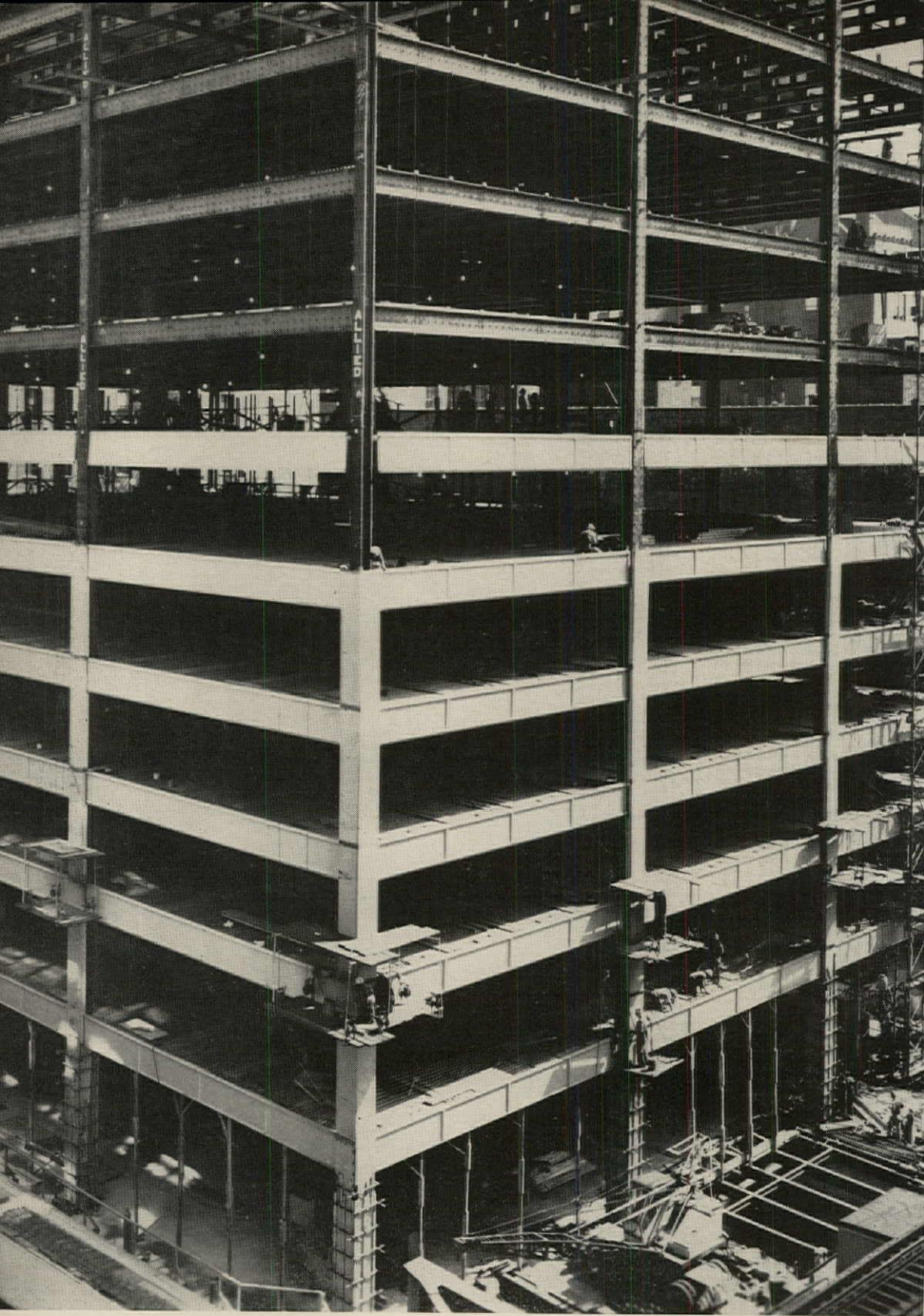


PHOTO LEFT, CHICAGO ARCHITECTURAL PHOTO CO.; PHOTO TOP, BILL HEDRICH, HEDRICH BLISSING

BIG BAYS: The Continental Center by Architects C. F. Murphy Associates, now nearing completion, has structural bays 42 feet square. The long spans provide savings in two areas. First, the beams are deep enough to allow ductwork to be run through holes in the beams themselves, rather than under the beams as is usually the case. In fact, the holes are so large that the beams bear a closer resemblance to Vierendeel trusses than to ordinary I beams. They are shallow enough to allow floor-to-floor depth to be kept to 12 feet. Second, the reduction in the number of columns saved on foundation work. The $\frac{3}{8}$ -inch spandrels and cover plates of high-carbon steel also serve as formwork for the fireproofing concrete. Studs welded to the backs of the plates and to the faces of the columns become reinforcement for the concrete.

The steel facing will be painted black. Tinted glass will be set in stainless-steel sash.

As can be seen in the details above, this building does not use the Miesian I beam mullions. Here, the structural rather than the window frame is emphasized. As a result, the extremely long bays should dominate the building's elevations.

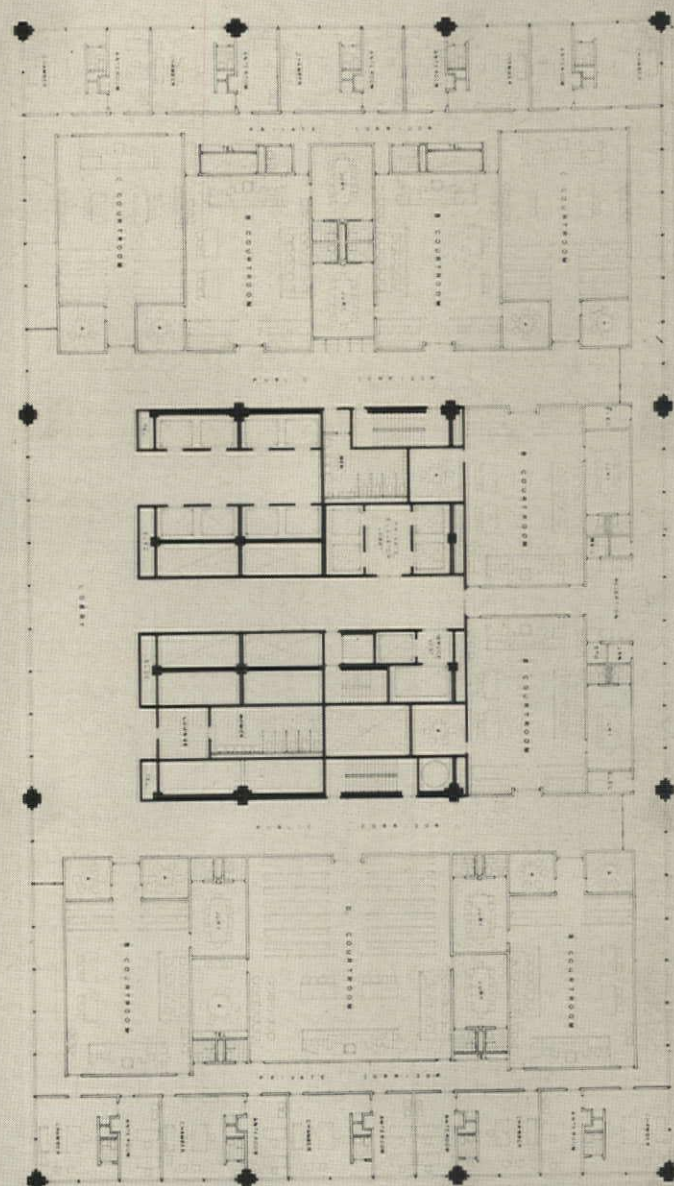
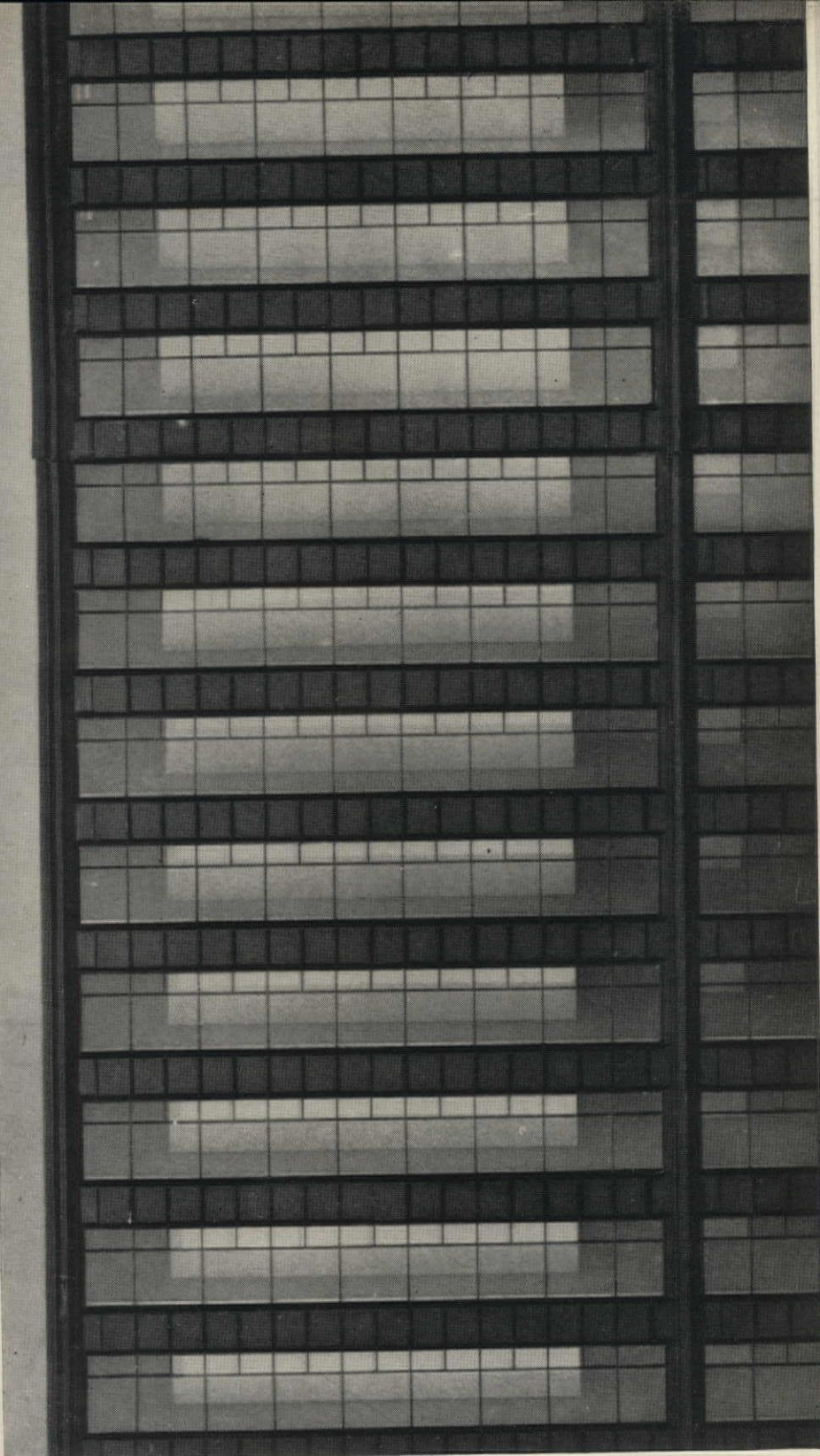
The building itself rises 23 stories on 20 columns. High-strength A 440 steel, used for the columns on the lower floors, re-

duced total column area at ground level to 120 square feet. Concrete caissons take the column loads to bedrock 100 feet below street level.

Air distribution is by a high-velocity, dual-duct system; a cellular floor carries wiring.

Total floor area of the building is 680,000 square feet, with 19,000 square feet of usable area per floor.

To many observers this is the finest building yet by this busy firm of architects.



BIGGEST BAYS: At least for a while, the proposed Chicago Civic Center should be the winner of the race for the biggest building bays. At 87 by 48 feet they will top the 60 by 25-foot bays of the Inland Steel Building, currently the multistory building with the longest clear spans in Chicago. It will also be the tallest building in the city: 31 floors, 630 feet. Foundations will be caissons extending to bedrock.

The steel frame will be faced with a special steel alloy which will need no painting; its protective coating will be the oxidation of the steel itself. Color will be russet brown with the glass tinted to match.

Typical floor-to-floor height is 18 feet, so that all floors may contain courtrooms if present forecasts are exceeded. Floor-to-ceiling depth is 6 feet.

The structural bays are arranged in three rows of three each. Interior columns occur in the core walls, so the interior floor space is completely unobstructed.

In its initial stage, the building will contain 110 courtrooms on floors 13 through 25. These will range in size from small hearing rooms to large courtrooms seating 150, and will be grouped around the elevator banks and public lobbies at the center of the building. As in the new Federal Courts Building, the large courtrooms

will run through two floors.

Gross floor area is about 1,460,000 square feet, and the total cost, including land, will be around \$75 million. Cost per square foot (including contingencies and furnishings) will be about \$39 per square foot. Construction is scheduled to begin early in 1963 and finish before the end of 1964.

C. F. Murphy Associates are supervising architect, with Skidmore, Owings & Merrill, and Loeb, Schlossman & Bennett associated.

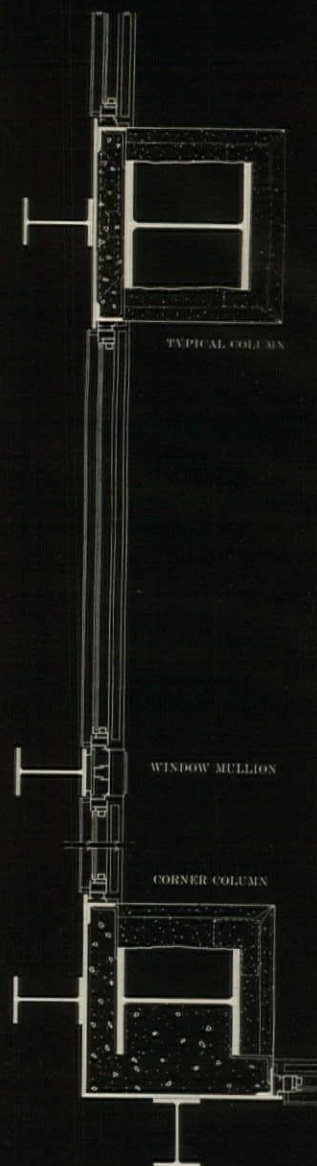
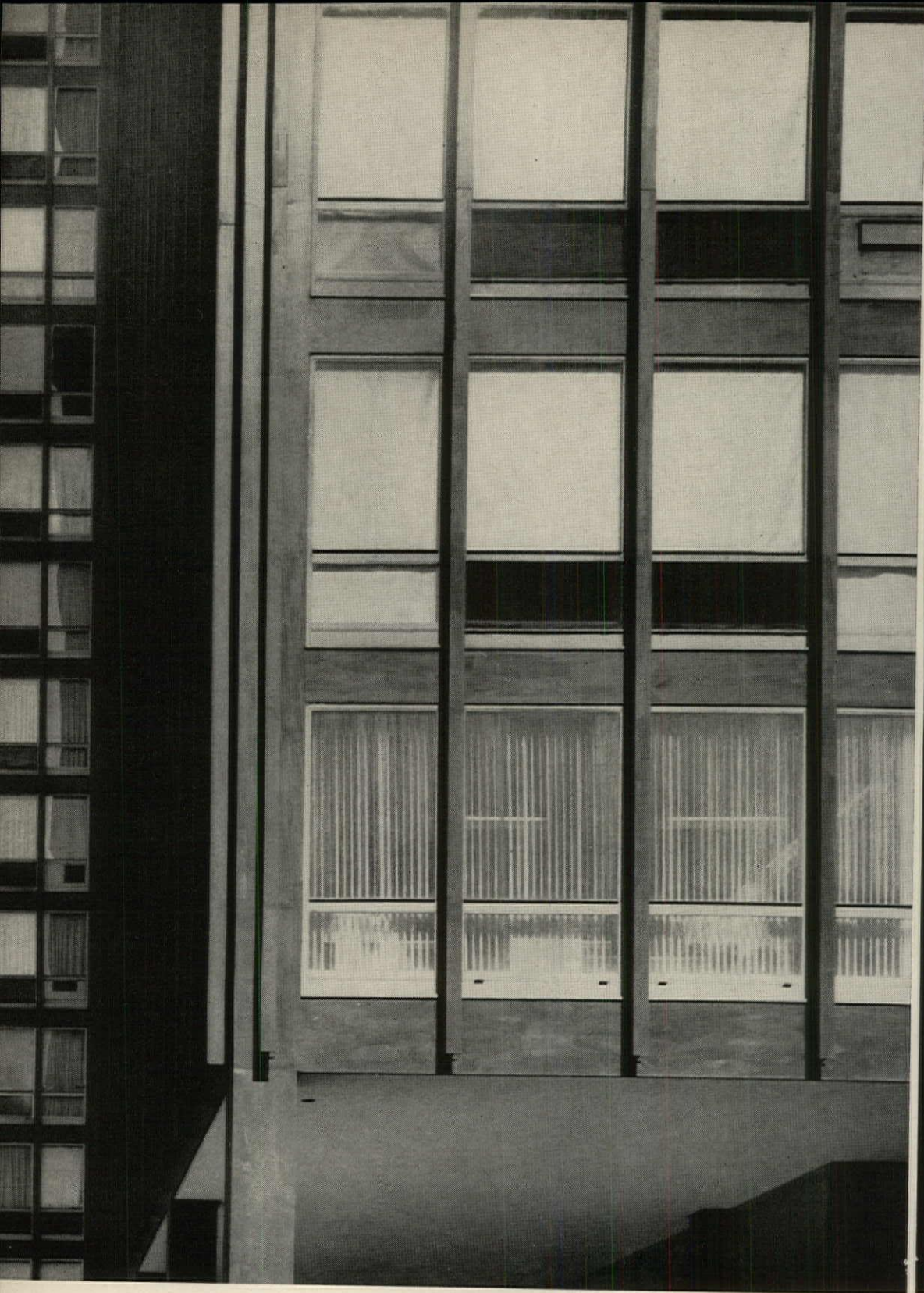


PHOTO LEFT, AARON BISKIND; PHOTO RIGHT, HUBE HENRY, HEDDRICH BLESSING

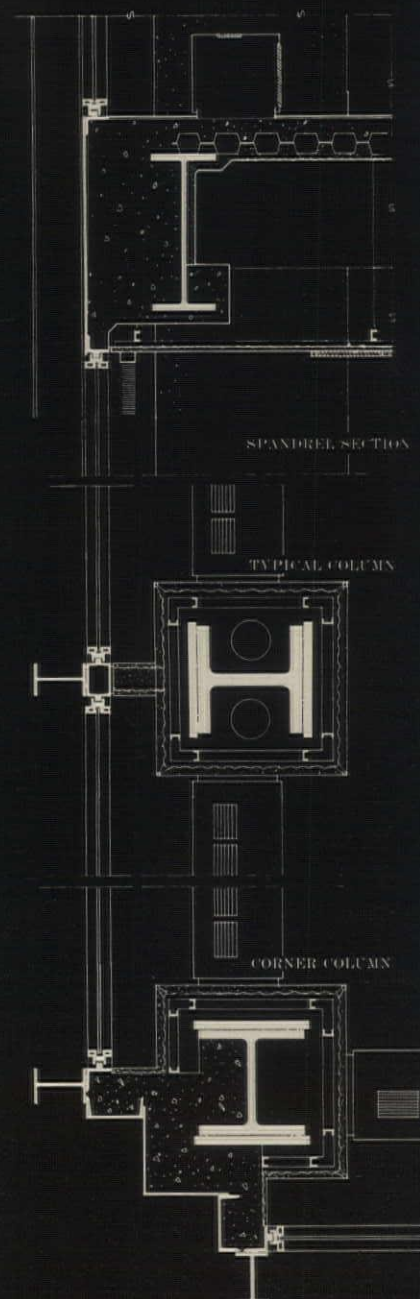
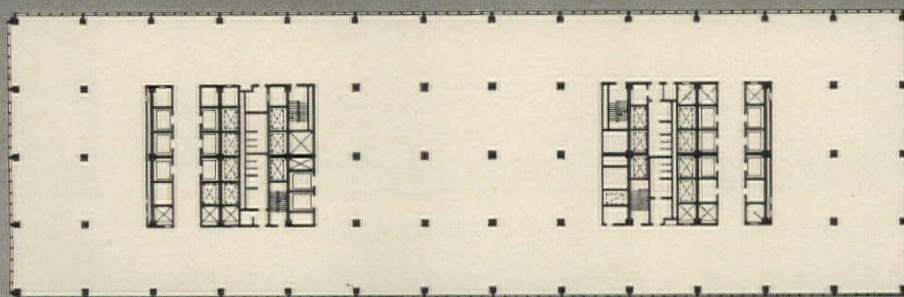
THE RETURN OF A TRADITION: The apartment houses at 860 Lake Shore Drive were at once in the Chicago tradition and precedent setting. "Chicago Construction" had returned and asserted itself; the "Chicago Window" was there as well.

In many ways, "860" had advanced little technically beyond the Carson Pirie Scott store; it could probably have been built in 1915. (Welding had been developed by then.) If ever a building has become a prototype, it is the "860" Towers, and somewhat ironically, they have been repeated more often as office buildings than as apartment buildings. They also contain what may be the most copied detail in modern architecture: the structural steel mullion. But, if it has become a cliché at times, it is not in the buildings of Mies van der Rohe which have followed.

These black-painted steel mullions facing the columns reputedly symbolize the steel frame hidden from sight behind its coat of fireproofing. (In 1951, the development of fireproof steel was thought to be imminent and it was hoped that it would soon be possible to expose the steel frame of a high-rise building.) In this case, the I beams are welded to the center of the columns. As a result, the windows next to the columns are narrower than those in the middle of the bays.

Bays are 21 feet square. They are arranged in three rows of five each. Floor-to-floor height is 10 feet and there are 25 stories.

There are two more recent pairs of apartment buildings by Mies in Chicago. Bay size has remained the same as in "860," but the number of bays, the materials, and the detailing have all changed. Their frames are concrete faced with anodized aluminum (one black, the other natural), and all the windows have become the same size.



MORE OF LESS: The formula for the high-rise building set forth in the 860 Lake Shore Drive towers has proven one with a surprising number of variations, and no one explored them with more imagination than Mies van der Rohe himself. The latest is Chicago's U.S. Court House and Federal Office Building, now in the foundation stage of construction.

At least two aspects are significant: bay size and core arrangement. Although the average bay size is 28 by 28 feet, the clear span jumps to 56 feet in courtroom areas. The service core has been split into two units, allowing a reception and secretarial-pool area between them.

The lower half of the building will function as typical office space. The upper half will house courtrooms and agencies. The courtrooms will extend through two floors.

When the details of the Federal Building are compared with those of 860 Lake Shore Drive, it will be seen that modifications have been made. As with the bay dimensions, the changes are simple but significant. The outside corner of the corner column's fireproofing has been moved out, and the mullions put on concrete fins. The result is even window sizes, a far more emphasized corner, and a building in which the vertical elements dominate the horizontal. The facing material for the build-

ing will be painted steel.

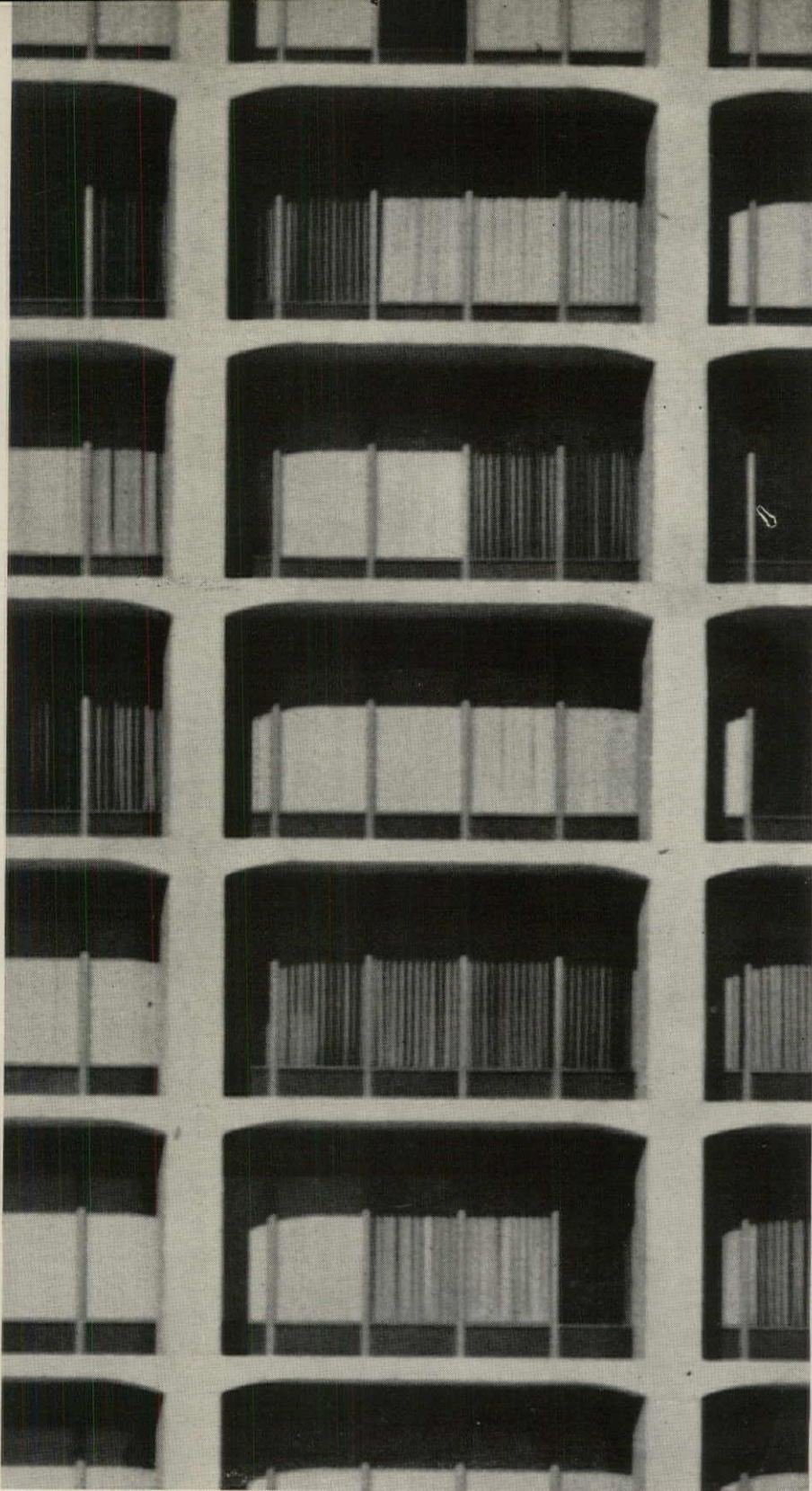
Unlike the 860 apartments, the Federal Building will be air conditioned. Each bay, therefore, is glazed with a single pane of glass, rather than divided into fixed and movable sections.

The building will rise 30 floors above the three underground parking levels.

Architects associated on the job with Mies are the offices of A. Epstein & Sons, C. F. Murphy Associates and Schmidt, Garden & Erikson.



BILL HEDRICH, HEDRICH-BLESSING



AARON BISKIND

STRUCTURES IN CONCRETE: Just as the revival of the expressed steel frame was triggered by Mies van der Rohe's 860 apartments, much of the present interest in the concrete frame may be due to his Promontory Apartments (above). They were originally designed in steel, but were built in concrete when it was found to be cheaper (square foot cost of the building was \$8.55 in 1949). Like the frame of a warehouse, the structure is completely exposed on the face of the building.

In most high-rise buildings column size is reduced every few stories to reflect changing loads and save on steel and concrete. Mies here turned this change to visual advantage by pulling the columns out beyond the wall and floor slab and then stepping them in as they go up the building.

EXTERNAL SKELETON: It has been said that the structural skeleton of a multistory building is often more handsome than the finished building. By recessing the window line 4 feet, 6 inches, Skidmore, Owings & Merrill have kept the frame of the recently completed Hartford Insurance Building emphatically in sight. This not only gives the building a strong identity, but also provides needed sunshading and easier access to the outside of the windows for cleaning.

Here the columns have been tapered uniformly, from 30 inches wide at the bottom to 23 inches at the top.

Structural bays are 22 feet square; floor-to-floor height is 11 feet, 6 inches. Light-gray granite clothes the reinforced concrete frame in compliance with the owner's request for a building with a masonry exterior.

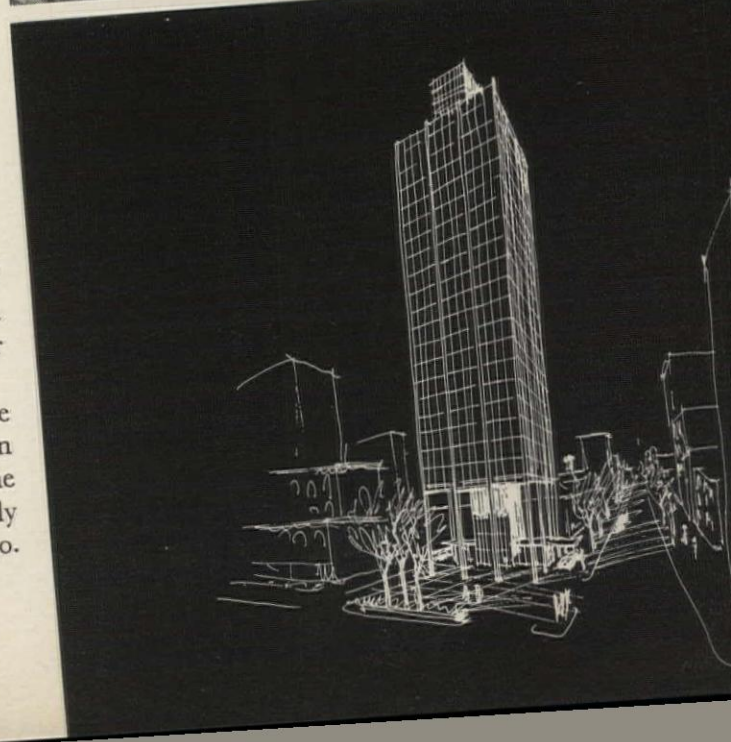


LEFT, HYDE PARK APARTMENTS; RIGHT, COURTESY PORTLAND CEMENT ASSOCIATION



BEARING MULLIONS AND SLIP-CORE: The buildings shown on this page represent two unique aspects of concrete construction. In the Hyde Park Apartments (above) Architect I. M. Pei has created a cast-in-place concrete wall which can be considered either a bearing wall or a grid of structural mullions. When high-strength concrete is used, a bearing wall for a multistory building need be little thicker than the average curtain wall.

Both slip-forms and the Heede-Linden climbing crane (FORUM, March '62) are being used to speed construction of the Astor Towers apartment house (right). Although the small (55 by 55-foot) building lot makes them especially efficient here, both are coming into common use in Chicago. Architect is Bertrand Goldberg.





GOLDSMITH: CHICAGO'S NEW STRUCTURAL POET

On a raw industrial tundra northwest of Chicago, a few miles from O'Hare Field, the low, sweeping frame of the new United Air Lines headquarters building stands white and calm and powerful, its great grid effortlessly spanning 66-foot bays with tremendous horizontal emphasis (above). This impersonal monument of prestressed concrete belongs to its own epoch with the same rational confidence as the jets flying overhead. It could have been created at no other time, and perhaps in no other place: its plain, virile strength springs from the vigor of Chicago today.

Impersonal as the building may be, it was of course conceived, like any work of art, by a person. Its principal designer is 43-year-old Myron Goldsmith of Skidmore, Owings & Merrill's Chicago office, an architect-engineer who may well prove to be the master of his generation. Goldsmith, indeed, may be one of the first of the artist-scientists foreseen by Pier Luigi Nervi as the "builders of a new physical order of civilization": men who have so mastered structure that they can express it intuitively, as poets do language.

Goldsmith—like his teachers, Mies and Nervi—has never doubted that "correct building" is the only feasible basis of development for a technological architecture. That such development is possible he has demonstrated in a score of profound—in some instances, revolutionary—designs for towers and bridges and hangars, arenas and stadiums, an observatory, a scientific breeding farm. Few of these projects have been executed, but virtually all possess significance comparable to that of Mies' visionary (and largely unbuilt) concepts of the 1920s.

Long before he enrolled in Mies' classes at Illinois Institute of Technology in the late 1930s, Goldsmith instinctively grasped some basic truths of the modern world in the streets of his native Chicago, the prototypical industrial metropolis. As a child, living in working-class districts that stretch mile on woebegone mile behind the stage scenery of the lake front, he experienced the technological strength of this brutal but strangely beautiful city of railroads and factories, through which locomotives chugged, and machinery whanged, and



AARON SISKIND; ARTHUR SIEGEL

where bridges lifted, suddenly, in a thicket of black girders.

At I.I.T., studying under Mies and the searching urban theorist Ludwig Hilberseimer, he learned that the enormous forces running through the city could be defined, and ultimately controlled. An impressive start had been made in the early skyscrapers he saw in the Loop, frankly displaying their steel frames. Lovingly he explored the city, and suburbs such as Frank Lloyd Wright's Oak Park, examining not only spaces and structures, but copings and casements, colors and carvings.

Goldsmith is primarily an architect, but from the moment he entered I.I.T. he determined also to become an engineer. When he graduated in 1939, his degree was in architecture, but he had received enough training to be licensed later as a structural engineer. It was as an engineer that he worked on heavy construction projects for the Navy's Bureau of Yards and Docks during the war, acquiring large-scale practical building experience unmatched among most architects.

After the war he went to work for Mies. Then, as now, Mies' staff included extraordinarily gifted young architects; in their stimulating company Goldsmith worked for seven years, during which the office produced 860 Lake Shore Drive, Pro-

montory Apartments, I.I.T. campus structures, the Farnsworth House, and the unexecuted projects for a drive-in restaurant (1949) and the Mannheim Theater (1953), with their remarkable diagonal trusses surmounting the roof.

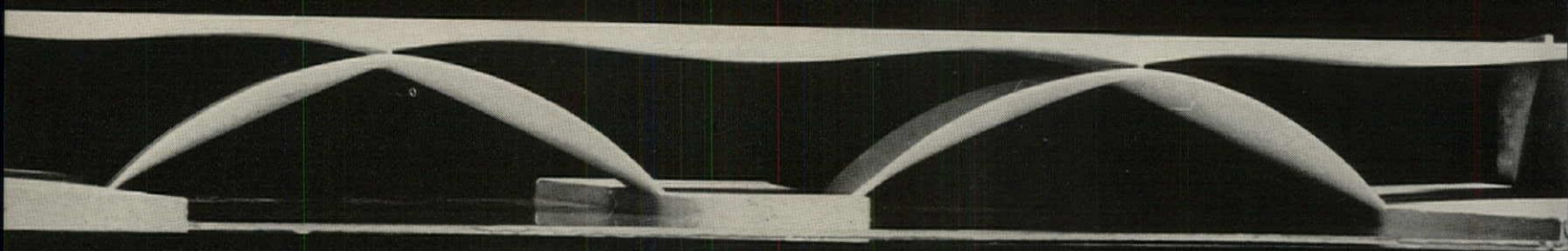
Such designs further confirmed for Goldsmith the truth of Mies' belief that "wherever technology reaches its real fulfillment, it transcends into architecture." But for Goldsmith the question remained: what is "fulfillment" in an age when structural technology is still "relatively primitive"?

The very tall building

Fortunately, Goldsmith was equipped to restate the question in the terms of a theoretical engineer as well as an architect: if technology were brought to bear on truly new structural problems, would not new expressions inevitably result? In 1948 he began to provide some answers of his own.

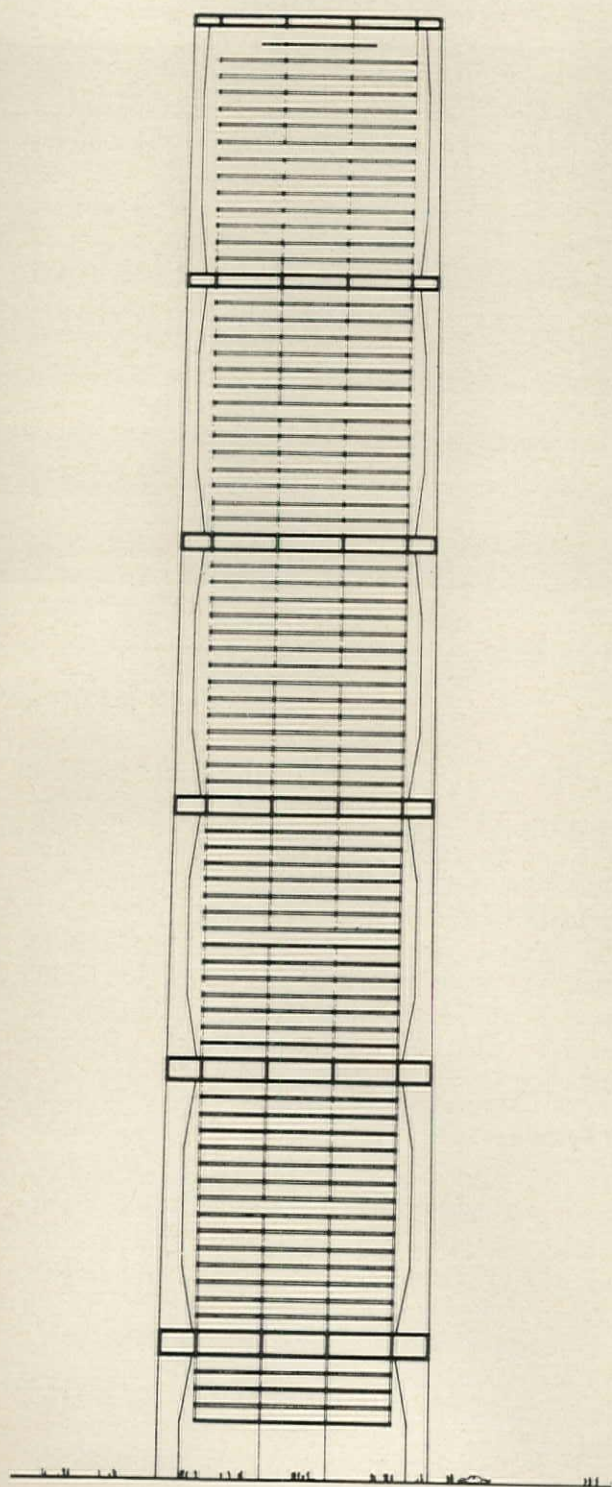
First he chose the problem of the tall building, for a master's thesis at I.I.T. It consisted mainly of designs for a series of astounding skyscrapers, among them an 86-story tower of prestressed concrete.

The tallest concrete building at that time, thanks to elabo-



Competition entry for the Garibaldi Bridge in Rome (photo above)

Design for an 86-story concrete tower (section below)



rate wind-bracing, had risen only to 34 stories in São Paulo, Brazil. To go still higher, and broader, to push the concrete tower to its furthest practicable limits, he devised a frame of six enormous platforms of prestressed concrete, from each of which seven stories would rise and seven would be suspended, with a column-free intermediate floor suitable for large rooms (see section, left). No less than 96 columns, requiring wide-spread foundations, would be needed in a traditionally designed building of such dimensions. Goldsmith did the job with only eight, each of which was to be 16 feet wide at ground level, but would grow appreciably slender as it ascended. The internal structure of the recessed, glass-sheathed floors would have been no heavier than that of a seven-story building.

Here was set forth, perhaps once and for all, an appropriate scale for very large structures: the individual floors, like stone courses in a cathedral façade, register their small size against the gigantic freestanding members, so that the overall impression of magnitude is overwhelming.

This was also the first work of architecture, as distinguished from engineering, to give plastic expression to stresses: not only did Goldsmith shape the huge, haunched joints, but he also placed these mighty structural bones decisively outside the glass skin. Not until the middle 1950s, in much smaller bays, did actual buildings simulate this parti, but even then, structure was used largely for decorative ends rather than as a sublimation of forces.

Almost as an afterthought to this thesis, he added three unprecedented designs for steel skyscrapers in which diagonal exterior bracing, once again powerfully asserting scale, criss-crossed both main and side façades to take both horizontal and vertical loads, especially wind loads, in an ingenious solution to the problems of excessive flexibility in tall buildings. Here again was a concept fully a decade ahead of its time.

The drama of concrete

Goldsmith had always treasured the lean strength and elegance of steel, but he was drawn by the drama inherent in concrete. Nowhere did he find this drama more compelling than in the Turin exposition halls and other masterpieces of Pier Luigi Nervi. In 1951 he traveled through Europe for nine months studying modern and ancient architecture, before returning to Mies. Then in 1953, thanks to a Fulbright Fellowship, he left for two years with Nervi at the University of Rome.

Three major designs date from this period, all done in col-



An early project becomes reality: this great trussed arena, seating 12,000 under a 400-foot suspended roof, will be built in Oakland, Calif.

laboration with James D. Ferris, who had also studied with Mies and was now a student of Nervi.

Their first joint work was an unfinished project for a column-free circular hall 800 feet in diameter, intended to shelter an entire sports complex, including a sunken arena for 12,000 spectators, placed slightly off-center beneath a skylight 270 feet across in a suspended catenary roof. This immense covering, supported entirely by self-bracing, diagonal exterior walls 100 feet high, was to be made of a concrete compression ring from which steel cables were to be hung; by means of moveable formwork a thin concrete shell would be poured, forming a homogeneous structural membrane which would be stressed by tightening the cables. Here was another classic architectural problem: the great hall, deliberately pushed to extreme limits to uncover a valid new form, that of a gigantic drum. It was the forerunner of a later Goldsmith design that will actually be built in Oakland, Calif. (above).

The next year, 1955, found Goldsmith and Ferris entering competitions for the Garibaldi Bridge and an Olympic Velodrome. Working with Architect Bruno Zevi and Engineer Carlo Cestelli-Guidi on the former, and with Architects Eduardo Schameson and Hilda Salem, and Sculptress Laura Ziegler on the latter, they showed how they could deal with very specific programs.

The bridge in particular, had it been built (it was slightly more expensive than the winner), would have ranked with Maillart's as one of the finest of the century. Its setting, in the midst of some of the world's most important monuments, also included (by rules of the competition) the existing abutments and central pier of the old bridge. These the architects would have spanned with two prestressed shell arches of concave profile. Resting lightly on the crowns of the arches was to be a ribbon-like roadway varying in depth with shear and moment, a quick lyric in concrete slenderly spanning 180 feet, yet purely structural in concept (photo, opposite page).

The Velodrome, which also failed to win its competition, exhibits the same expressive richness, achieved modestly this time with molded, crescent-shaped earth forms. Because bicycle racing demands steep turns precisely where spectator visibility is poorest, the architects heaped the earth high on either long side, forming beautifully ordered stands, and sheltered one lifting ridge with a shell canopy supported at three points to give focus and life to the whole.

Goldsmith was now 37, still largely unknown except to a small group of advanced designers. He had built nothing on

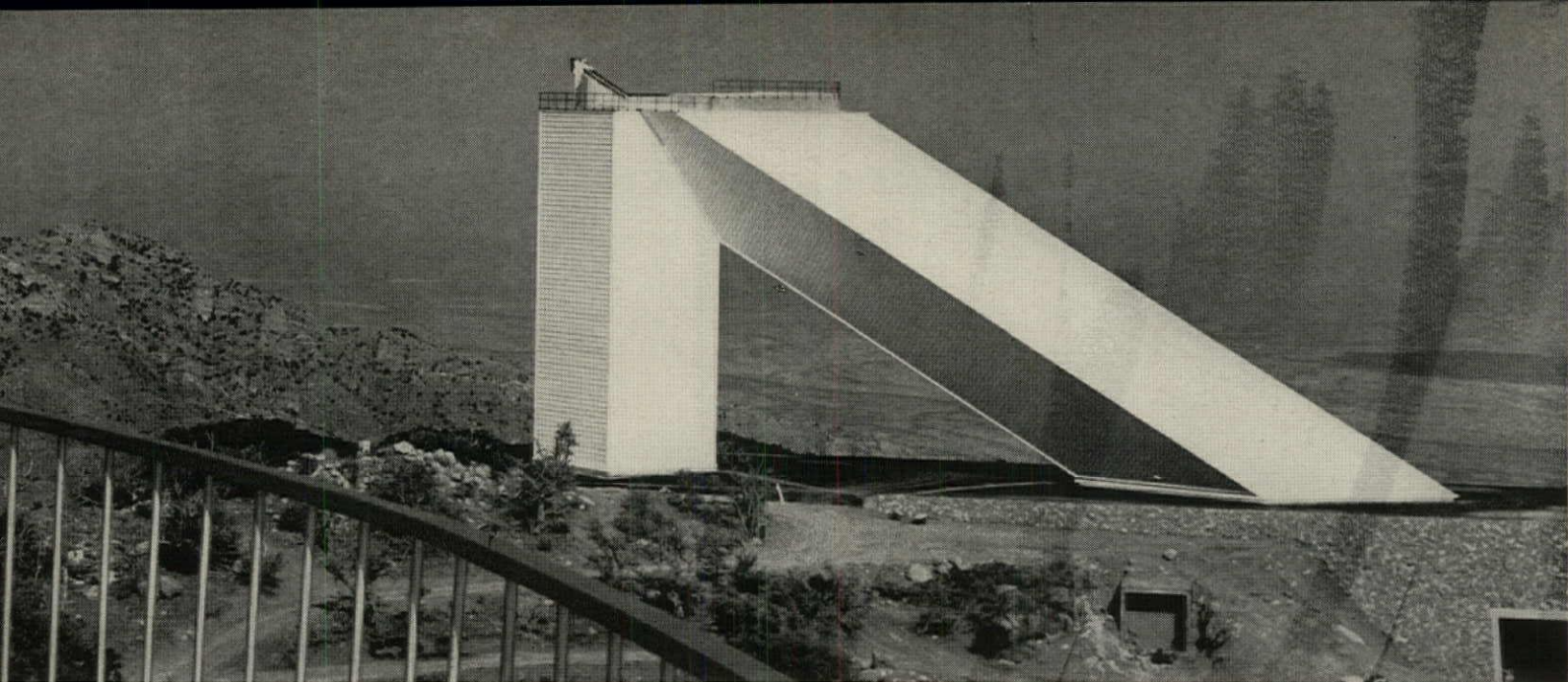
his own, even though men his age were in charge of large projects everywhere. Then, quite unexpectedly, came a message from SOM Partner William Dunlap (whom he had known earlier in Mies' office) which changed the course of his career. SOM had commissions from United Air Lines for two hangars at San Francisco Airport, one a huge enclosure for four jets, the other a wash hangar accommodating one jet at a time. Goldsmith rushed back to become head of the structural department at the firm's west coast office, and was joined there by Ferris. To some such a large firm might seem restrictive. But to Goldsmith SOM's sumptuous resources—its corps of designers, its capable administrators, its familiarity with large projects, its facilities for research and model making—were liberating, rather than confining.

And so to Chicago

There were difficulties, even compromises, as there are in most undertakings in which budgets and clients play a part. The hangars (FORUM, March '61) were solidly enclosed, rather than glazed, as Goldsmith wished, and thus their structural impact is decisively weakened. Furthermore, they were marred with signs, where glass walls could have displayed the planes as incomparable ads for UAL. But with their stirring interior spaces, the hangars were still rewarding achievements. In another promising project, a 400-foot version of the great circular hall proposed for the Portland Coliseum was rejected by the city in favor of a less radical scheme in which Goldsmith had no part (FORUM, April '61).

Without any other large structures in hand in San Francisco, Goldsmith moved to the Chicago office, where for the last three years he has been a mainstay (and now an associate partner) of one of the busiest and most competent architectural teams in the U.S. Goldsmith, like many good architects who have profited from the example of Walter Gropius, has thrived on teamwork: he is convinced that a germinative structural idea will arise from careful study of any problem, and that if the problem is difficult enough, an objective search by several individuals, working within a unifying structural discipline, may help to find it. In SOM's Chicago office Goldsmith found a number of gifted designers, most notably Senior Partner Bruce Graham, with whom he has worked closely and well.

When Goldsmith arrived in 1959, Graham was already started on an 18-story hotel for the late Herbert Greenwald, whose untimely death cancelled what would have undoubt-



PHOTOS: (LEFT) BILL SEARS: (OPP.) HEDRICH-BLESSING

Observatory on Arizona's Kitt Peak: a heliostat on a 100-foot tower; a diagonal shaft to transmit the sun's image to an underground room

edly been one of the outstanding buildings of the 1960s. Under Graham's direction the functional program and overall dimensions of the tower had been established, and it had been well sited in the Loop. The decision had also been made to take up the bones-outside-skin theme of exposed concrete framing which the firm's New York office had just employed in the design for the Banque Lambert in Brussels (but which corresponded with ideas Goldsmith developed before 1950).

Goldsmith now pitched in to give the building a magnificent structural expression. Rising on shapely but powerful pylons which curve in reply to the stresses passing through them, and which lift three stories to create a lofty *piano nobile* that would have been one of the impressive rooms of modern hotel design, the building ascends as a unit, its frame subtly divided into three groups of five stories. Each group was to have been precast as an ensemble, growing visibly lighter, but preserving the same system of proportions and the same expression of structural forces, up to the roof, where a curvilinear penthouse completed the vigorous composition.

This was more than hotel design. It was a prototypical small tower with innumerable potential applications to other designs (see SOM's Hartford Insurance building, page 132). Indeed, it holds the seeds of a technological cityscape which can be visualized in the handsome group of three apartment towers to be erected at Kansas City, for which other SOM designers merely modified and repeated the structural parti for the hotel.

A gigantic sundial

Next Goldsmith turned to a highly specialized commission: the recently completed solar observatory on Kitt Peak, 40 miles southwest of Tucson, which he and a team of architects and engineers thrust up against the Arizona sky like a giant sundial (above). The astronomers virtually designed the structure in advance through their exacting specifications, but the dozen or so preliminary concepts which Goldsmith developed, in close collaboration with partner-in-charge Dunlap, show the decisive part he played. The astronomers wanted a tower of extreme rigidity on which to place the heliostat, supporting the 80-inch flat mirror which is exposed to the open air. They further required a diagonal 480-foot shaft through which to transmit the sun's image to several redirecting mirrors before it finally comes to a subterranean observation room. In the final design, the heliostat was supported on a freestanding concrete tower 100 feet high shielded by a

water-cooled copper windscreen (painted white to reduce solar absorption further). The result is that the instrument vibrates only 0.001 inch under heavy wind.

Goldsmith found the observatory a fascinating project. But he considers it too specialized to have broad significance, which is what he would like to achieve in every design. The same striving for excellence and indifference to passing architectural chic suffuses all of Goldsmith's buildings, from his early houses to the monumental power of the United Air Lines building. UAL, in spite of its visual splendor, is one of the least expensive structures of its size in the country. The total cost was held down (at some loss to the detailing) to a low figure, of which the structural cost was under \$4 per foot. Nevertheless, Goldsmith, boldly prestressing the building in two directions, was able to provide stately 66 by 60-foot bays, monumental courts, and the steady processional advance of the colonnade (opposite).

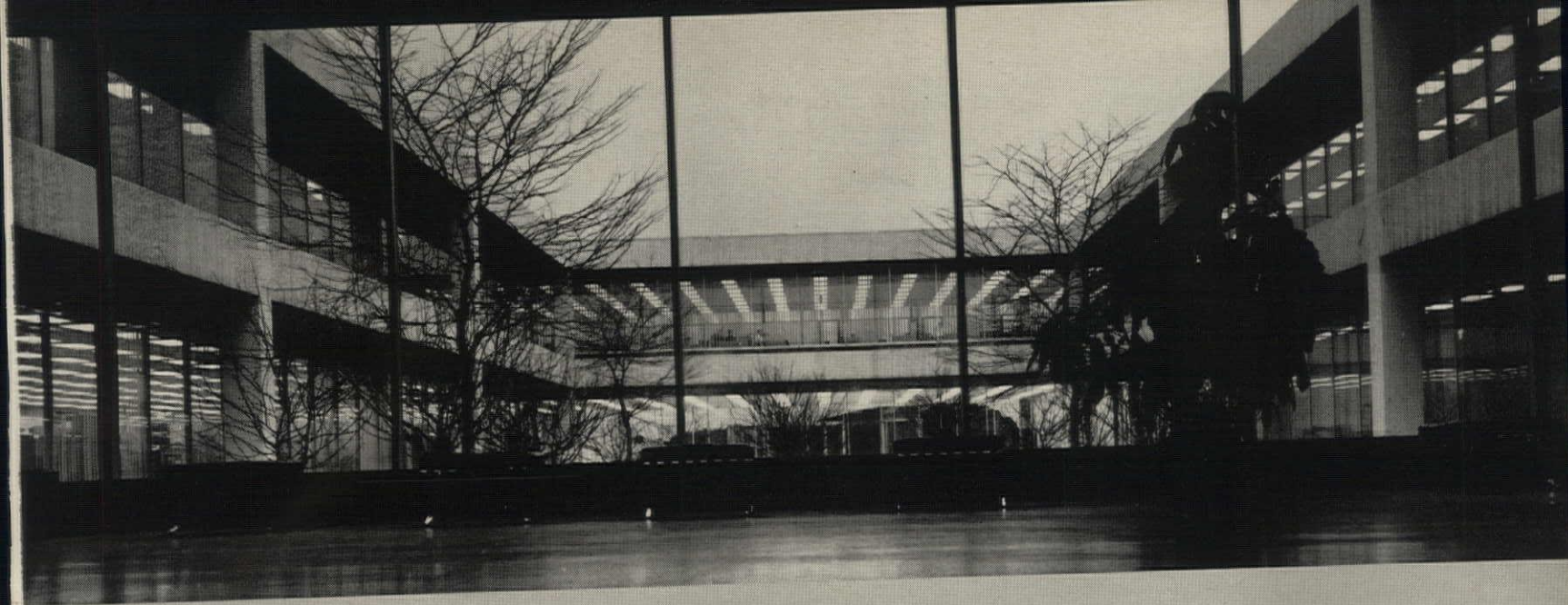
Technology's new wave

Goldsmith's rational "universal" structures quite literally span the chasm which exists in architecture between humanism and science. One secret of culture is continuity, and now, as Goldsmith teaches the graduate students at I.I.T., in the noble room which Mies created and over which he presided with philosophic calm, the process of education goes on, and a new generation, designing hangars for Goldsmith as he once designed houses and towers for Mies, becomes aware of the tremendous technological wave on which the new architecture has scarcely commenced to rise.

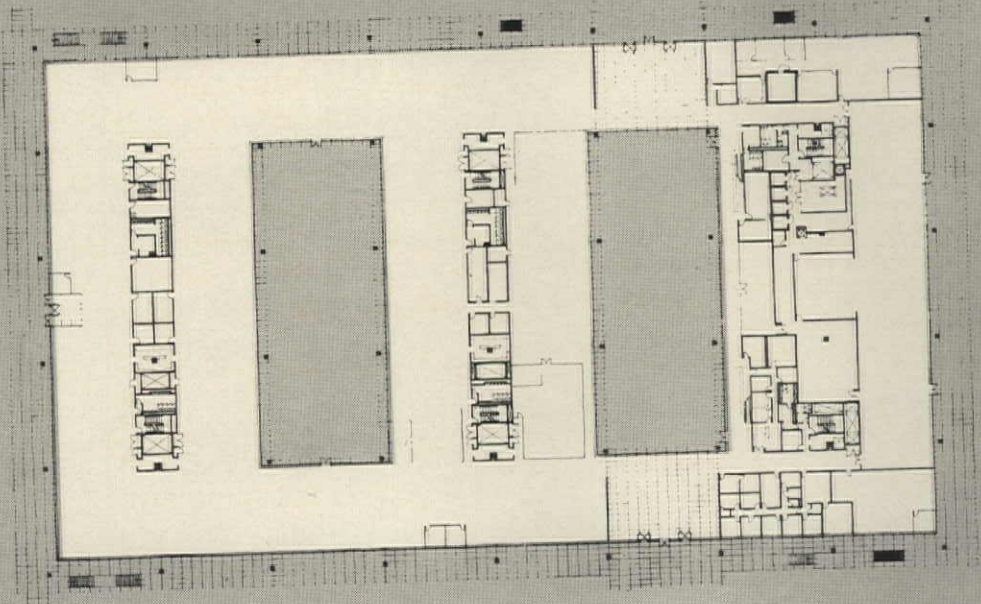
More and more, the new architecture is going up. Goldsmith's circular hall, enclosing an area for 12,000 spectators, is scheduled to be built in Oakland, Calif.—not the immense concept of the days in Rome, but nevertheless a room 400 feet in diameter. Near it, on the other side of a great plaza, will be a 48,000-seat stadium—not the Velodrome, but a field in which the conflicting requirements of two sports have been solved within a single form: a circular space for baseball which, by the simple movement of some stands, will be transformed into an oval for football.

Not many in the crowd will know that the great glazed esplanades and the giant X frames were conceived by an individual, or even by the firm of Skidmore, Owings & Merrill. But as the strength of these buildings enfolds them, they may have an intimation of Goldsmith's credo: "It is never possible to go too far in a structural direction."

ALLAN TEMKO A1971X



United Air Lines Executive Office Building, Chicago, Ill. Architects and engineers: Skidmore, Owings & Merrill; William E. Hartmann, partner in charge; Albert Lockett, project manager; Bruce J. Graham, in charge of design; Myron Goldsmith and James D. Ferris, designers. Consultants: T. Y. Lin & Associates. General contractor: Gust K. Newberg Construction Co.





Residential island scheme by Architect Harry Weese would accommodate 500,000 persons in small neighborhoods branching from a transit-highway stem

ISLANDS IN LAKE MICHIGAN: REALITY OR DREAM?

Ever since the development of economical dredging, the vision of islands enlivening the bleak horizon of Lake Michigan has been a Chicago obsession. Of all the city's dreams, that of man-made islands has been one of the most persistent.

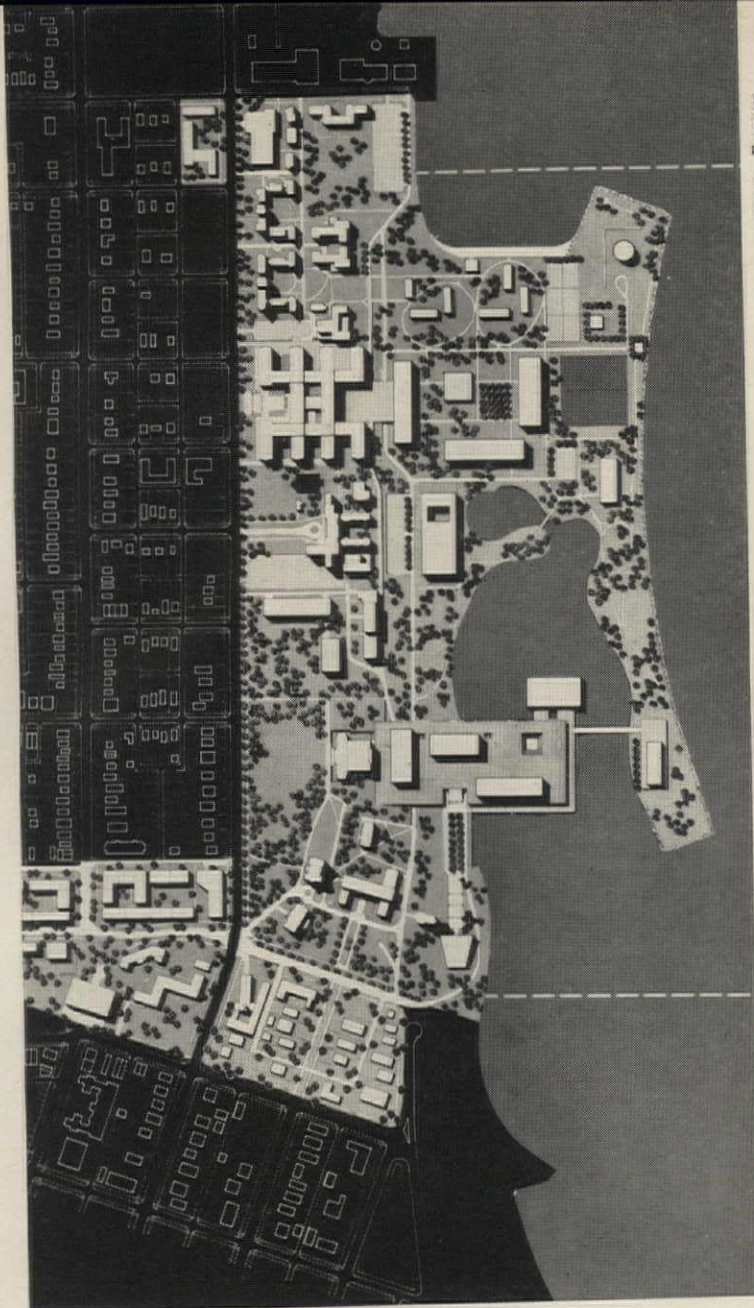
The city has long been stealing land from the lake by filling, but Daniel Burnham was probably the first to make a definite proposal for islands. His plan of 1909 (page 108) scattered small pleasure islands, reachable only by boat, in the lake opposite Chicago.

In 1937, a plan proposed by a sanitation engineer, Ralph Leffler, reached the detailed drawing stage. Leffler thought that some 40 miles of twin dikes and highways should be built all the way from east of Gary, Ind. to Wilmette, Ill. These, it was estimated, would have cost on the order of \$160 million and would have incorporated stilling ponds for water supply, boating lagoons, locks, harbors, and swimming beaches. Not the least important aspect of this proposal was its solution for the chronic offshore pollution problem: by dropping the level of the inland water system at least two feet below that of the lake, sewage would be taken down the various rivers and

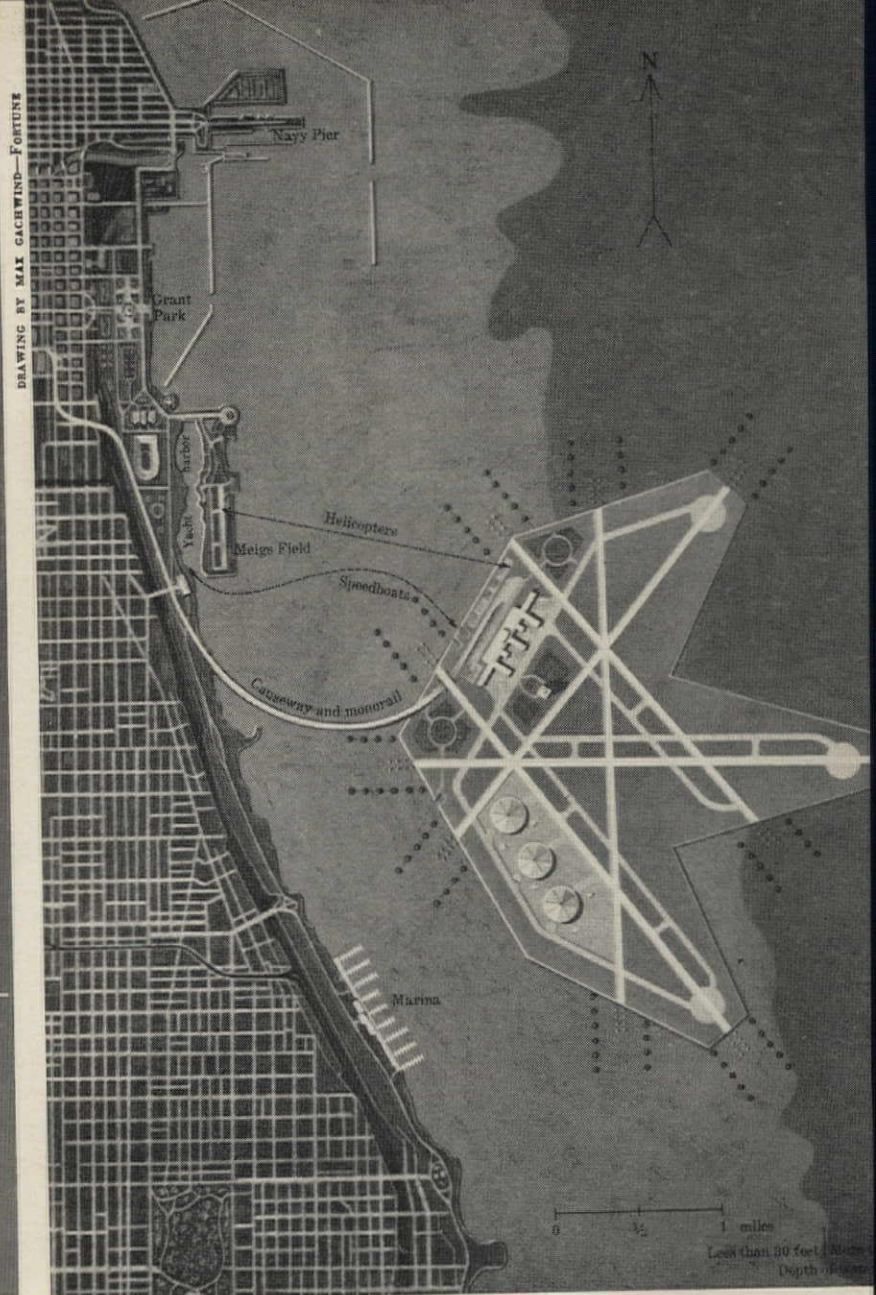
away from the lake, preserving it for recreation and water supply. (The sewage problem has since been solved.)

Early in the 1950s, schemes started coming hard and fast. Chicago Architect Harry Weese suggested that a series of residential islands would ease the critical shortage of urban land and add what he called the "city's missing half" (sketch, above). His islands would be a half-mile to a mile and a half wide and two miles offshore, where the lake bottom comes up to within 35 feet of the surface. They would be reached by a toll bridge and tunnels. An earth mover's estimate put the cost of land at just under \$2 per square foot for ten to 25 square miles. Fill would be pumped into rock cofferdams around the perimeter of the islands. At that time, redevelopment write-down costs were running over \$3 per square foot. Estimated time for dredging: about 15 years.

Charles Genther of Pace Associates also has a scheme for residential islands, but with a difference: he, too, would put the islands about two miles out, but he would run them all the way across the bay and, as an economic justification, use them to carry a bypass toll highway. Those opposite the city would



SOM's "cape" plan will extend Northwestern University into the lake



Chicago airport plan by Engineer Alexander Riff, Designer Charles Hegyes

be reached by tunnels. Genther maintains that the residential land thus gained would allow much of the inshore land now under (or scheduled for) residential redevelopment to be turned over to industry. At present, much of the lake front is industrial; if industries could be moved farther inland, says Genther, the lake shore could revert to recreational uses. Like Weese and Leffler before him, Genther points out the additional advantages of safer swimming and boating.

While the Leffler, Weese, and Genther schemes are still in the dream stage, there are now two island-building ventures which may well go ahead. Skidmore, Owings & Merrill have a plan under contract to extend Northwestern University with a 65-acre peninsula reaching out into the lake (plan, above). Land cost is estimated at 25 per cent of that in Evanston, and it would remove no property from the tax rolls.

The other is the recreational island included in the 1958 Development Plan for the Central Area of Chicago. If built, it will include beaches and boating facilities and will rest just offshore between Grand and North Avenues. A causeway would link it to the city.

Whether the next few years will see a rash of island building is hard to say. There are those who view these schemes with some misgivings. Qualified observers have pointed out

a number of drawbacks. In the first place, it seems self-defeating to build new areas in the lake when so much of the existing city obviously needs redevelopment. Chicago does not suffer from a land shortage. There is also the matter of reaching the islands; the cost of tunnels or suspension bridges, even if they paid for themselves in time, would be no small matter. Then, there is always the Lake Front Ordinance, passed in the 1890s, which says that there can be no building east of Michigan Boulevard between Randolph Street and Eleventh Place (the Illinois Central Terminal) without the full consent of every property owner on the west side of Michigan Boulevard in the area affected.

Meanwhile, City Planning Commissioner Ira Bach feels that the islands would be expensive to create on a large scale and ill-suited for year-round residential use. (Inhabitants of Manhattan, Venice, Stockholm, please note.) And Planner Alfred Caldwell adds: "The sea is the one great natural feature of Chicago . . . there is only the prairie and the endless white horses of Lake Michigan charging the shore." But, on the other hand, there are similar schemes afoot in other crowded (and less affluent) cities, like Tokyo. Says Harry Weese: "As it is, the lake is a bit of a bore."

In short, some islands are being built, and more may come.

Needed: a new Burnham plan for Chicago's future

"Make no little plans," said Daniel Burnham, and thereby created planning's most famous cliché.

Burnham himself would probably be dazed by the Chicago of today, and staggered by the Chicago of 1980. Tomorrow's Chicago simply cannot be comprehended in little terms: it will be a sprawling agglomeration of over 9 million persons, two-thirds of them living outside the city but inextricably part of a totally new kind of urban scheme. Holding this mass in a concrete vise will be over 300 square miles of streets and expressways, eating up one-quarter of the area's land—traffic density will have tripled.

Population growth and highway expansion go hand in hand, and they also underlie most of Chicago's future problems. Given forces already in motion, it would seem that Chicago can do little about its population outlook; but in most other respects, including highways, it can make decisions directly affecting the shape of its future—as Burnham made decisions in the early part of the century.

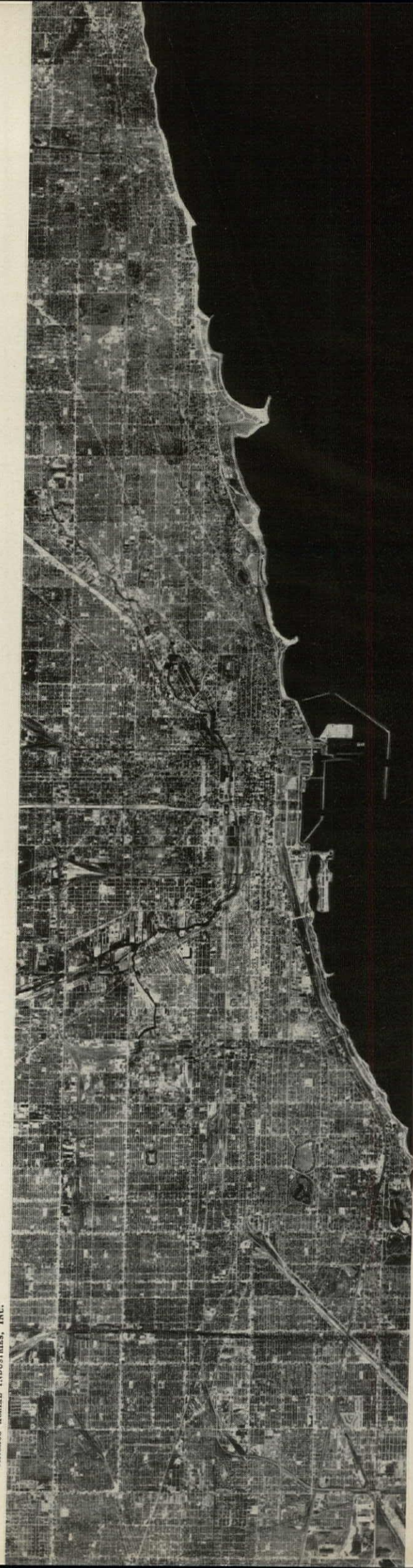
What Chicago needs today is a new kind of Burnham Plan, one which would be founded in the city's great tradition, and engineered in the light of latter-day technology. The problems are awesome: Chicago must be able to plan intelligently for a different sort of industrial base from the one it has today (the city's industrial strength has been ebbing since 1957); it must make up its mind whether mass transit will work, or whether the area is to be strangled by freeways; it must appraise objectively its potential as a world port (the St. Lawrence Seaway has been a disappointing factor in Chicago's growth so far); and it must make up its mind that all of its citizens, regardless of color, will be fully integrated into the life of the community.

Planning to face up to these and other problems involves many more variables than Burnham ever had to face. Most of all, it calls for the drastic reduction of over 1,000 units of government in the greater Chicago area. Not only must planning address itself to the vast area of which Chicago is the nucleus, but the political implementation of that planning must be similarly directed. So far, the tools to accomplish this are primitive—but last month's Supreme Court decision at least may give cities their day in court, and a first chance at breaking the stranglehold of rural-oriented state legislatures.

Unraveling the political snarl would be the first step toward the sort of rational planning Burnham pioneered. To do this will take the same kind of leadership Burnham inspired. Politics, business, and art must again mass forces to meet a bigger challenge than Burnham envisioned. Given its great heritage, no American city has a better chance to realize its destiny.

END

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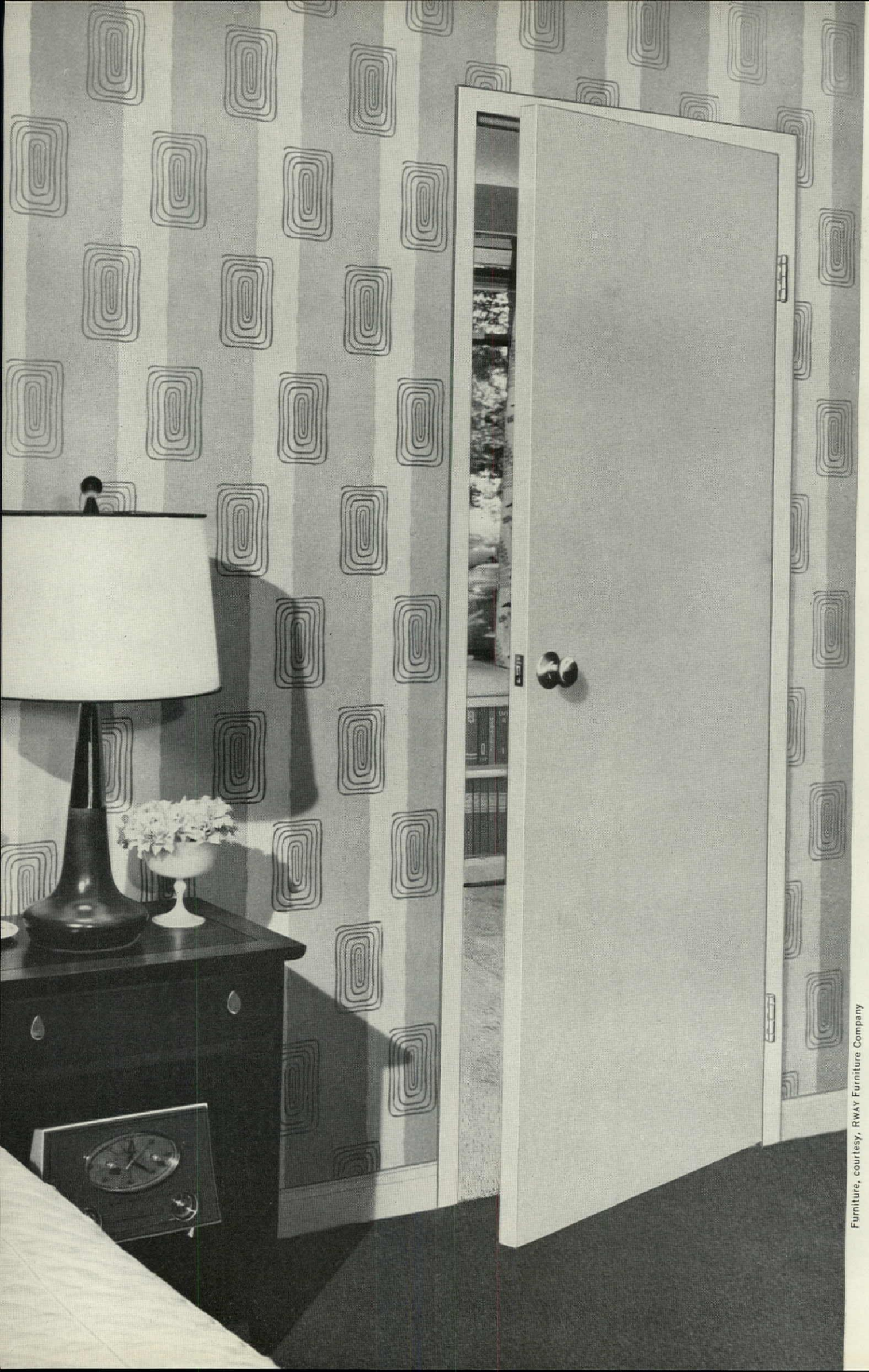
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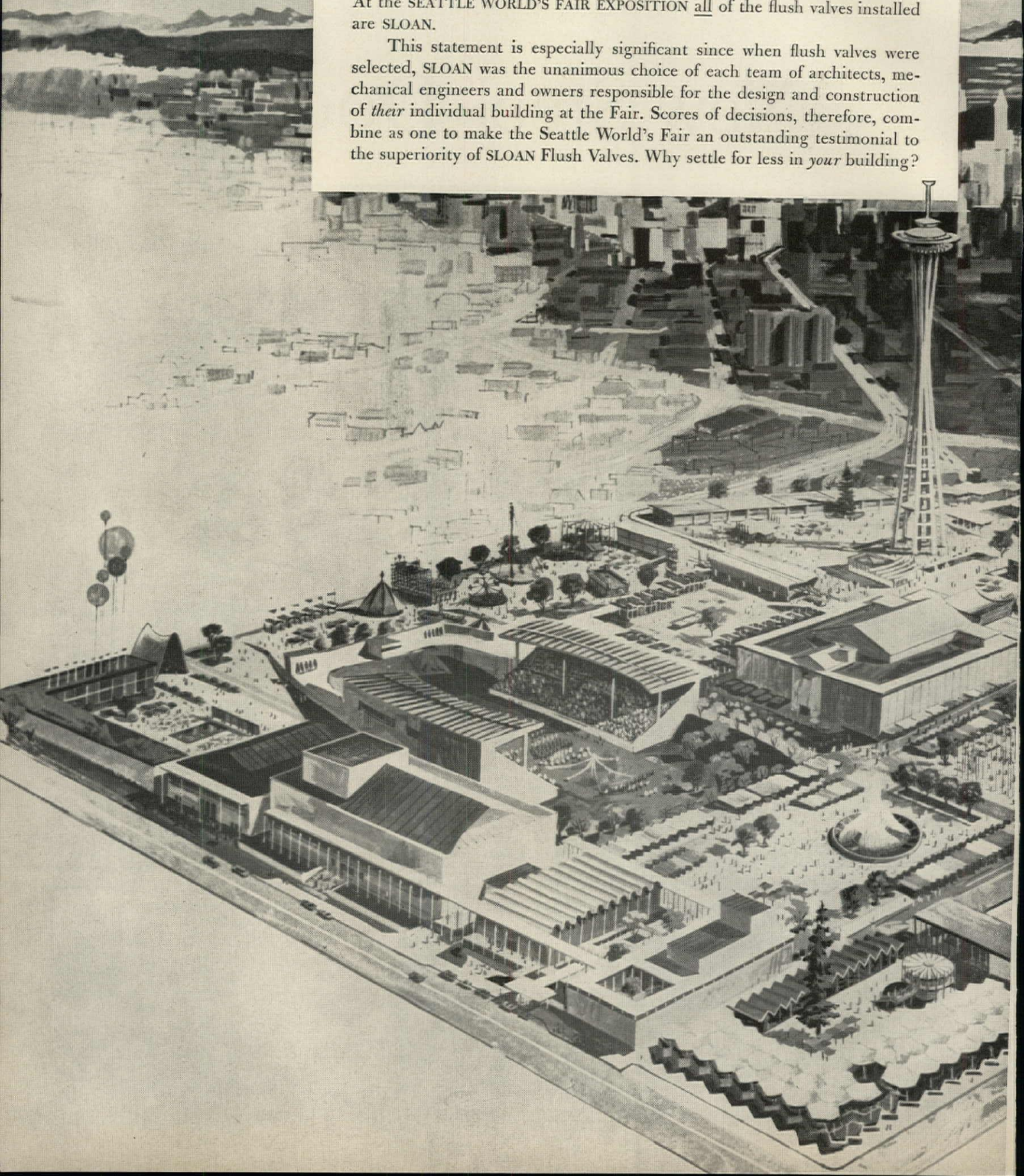
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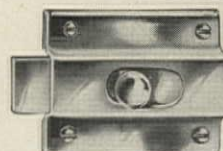
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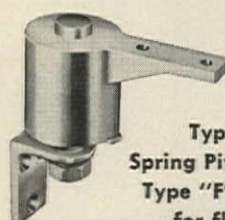
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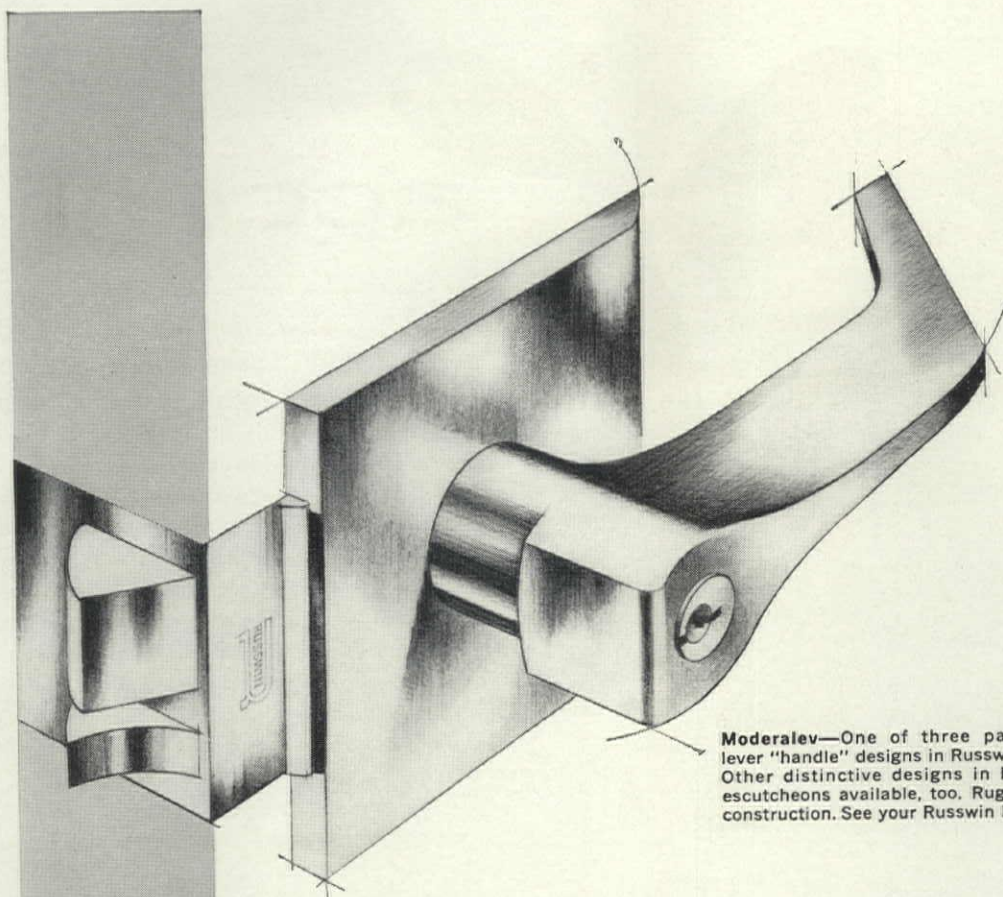


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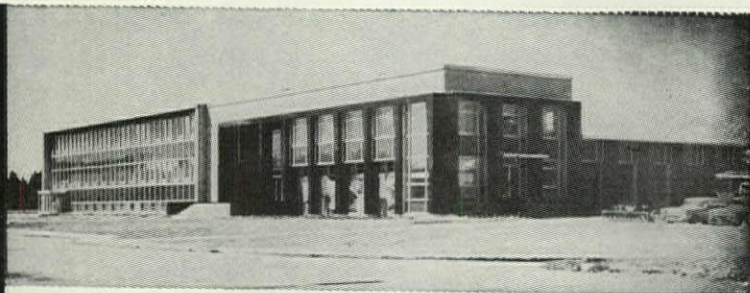
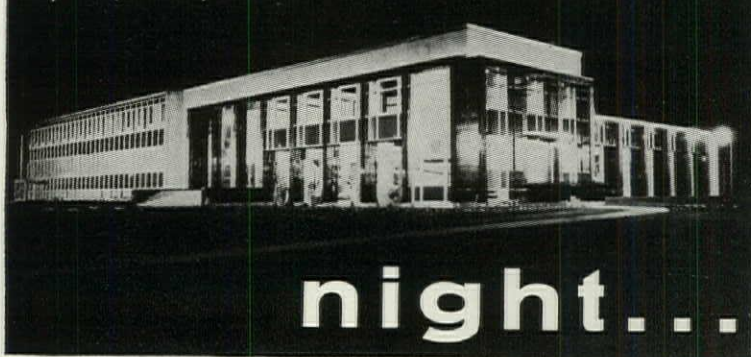
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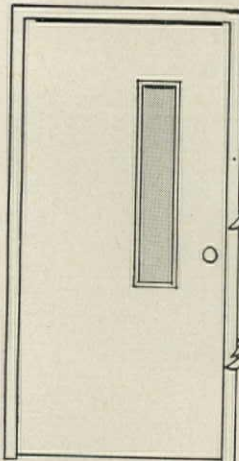
Flush panel design presents a neat, trim appearance.



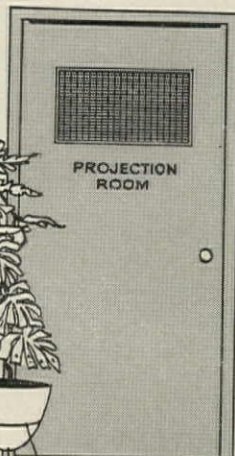
A functional 10" x 10" vision lite adds an attractive touch.



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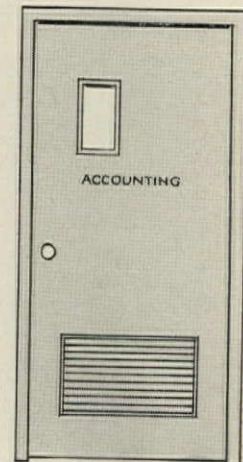
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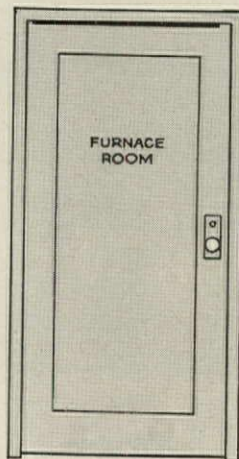
Typical combination of vision lite and louver.



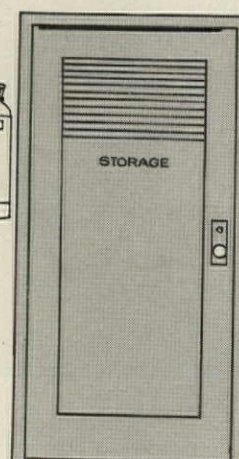
Multi-lite design achieved with snap-in glazing strips.

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BUILDING PRODUCTS REGISTER AIA. Published by The American Institute of Architects, 1735 New York Ave., Washington 6, D.C. 427 pp. 8 1/2" x 11". \$25 (\$15 to members).

The second edition of this valuable handbook, developed by AIA staff and members over many years of work, has been expanded from 18 to 24 categories, and refined for easier use (e.g., a trade names index has been added, and entries regrouped in page layout). The Register is the only single source reference for direct comparison of building products and their performance. Copies may be purchased directly from AIA or ordered for a 30-day trial.

NEW BUILDINGS IN THE COMMONWEALTH. Edited by J. M. Richards. Published by Frederick A. Praeger, 64 University Place, New York 3, N.Y. 240 pp. 8 3/4" x 11 1/4". Illus. \$14.50.

This survey of contemporary architecture in the British Commonwealth furnishes a fascinating architectural travelogue through areas that are rapidly growing and developing their own national style in building. Compiled from two special issues of *Architectural Review*, half of the book is devoted to the three large Dominions of Canada, Australia, and New Zealand, and the second half to the less familiar, smaller territories. Each area covered is introduced by an expert on local building conditions, who explains how climate, labor, and materials form an architectural character and individuality.

The influence of the U.S. is seen throughout. In an introduction, Professor Nikolaus Pevsner writes: "That Toronto should look to Detroit and Chicago, and Vancouver to Seattle, San Francisco, and Los Angeles is nothing surprising. But that, throughout the three Dominions, England as a source of inspiration has been eclipsed by America calls for some thinking." Australian architecture, as shown in new building in Sydney, Melbourne, and Adelaide, seems a striking example of American sophistication with an added local fillip of youthful exuberance and style.—A.P.

THE FIRST BOOK OF ARCHITECTURE. By Lament Moore. Published by Franklin Watts, Inc., 575 Lexington Ave., New York 22, N.Y. 82 pp. 8 1/2" x 7". \$1.95.

In general, this book with a laudable purpose is laudably done. To give the uninformed at any age level a concise story of architecture is a solid aim, but the intricate nature and wide scope of the field do not lend themselves easily to the clarity of a primer. It is apparent from the book that organization of the story around broad building types is a simplification, but the question is whether it is the right one. History, it seems from ample past experience, is a much firmer anchor. Nevertheless, the book is a good beginning, well illustrated, and generally sound.

THE BUILDINGS OF ENGLAND: NORTHAMPTONSHIRE. By Nikolaus Pevsner. Penguin Books Inc., 3300 Clipper Mill Rd., Baltimore 11, Md. 510 pp. 4 1/4" x 7". Illus. Paperbound, \$3.50; clothbound, \$4.50.

Not the least possession of the English is their respect for architectural learning, and the attention that their publishers pay it. This book is an example. In its 510 pages (plus 64 pages of plates) the lively English historian, Nikolaus Pevsner, walks through the most interesting buildings of Northamptonshire County, principally the prodigious country houses and less prodigious churches of the late sixteenth and seventeenth centuries. The thousands upon thousands of words of quite brisk description are all in Mr. Pevsner's distinctive, impeccable diction. Strolling through Althorp Park, he pronounces "splendid ENTRANCE HALL, the noblest Georgian room in the County" and means nothing more nor less than this.

An introduction by the author covers from prehistory up through a house by Peter Behrens in 1926 (decorated, at that, by Mackintosh!). Frequent in most of the descriptions of buildings are lancets, quatrefoils, trefoils and lozenges—as they should be—and the very ring of the English country names is almost enough to keep the reader reading: Blisworth, Brackley, Chipping Warden, Kings Sutton, "... the monument to Sir Hatton Fermer at Easton Neston."

Among the names recognizable from history will be Inigo Jones and, perhaps, Hugh May, who, Pevsner points out, developed what is known as the Wren style in domestic architecture (in the late seventeenth century) while Wren was still a scientist, not yet deeply involved in architecture.

Mr. Pevsner's mild request in the foreword that his readers submit corrections to errors they observe in his book will draw little response from this side of the Atlantic, but certainly his book will draw respectful readers. He suggests that the most notable piece of architecture of our own century in Northamptonshire is a superhighway (pointing out, however, "on the motorway elegance was arrived at only in the footbridges") and includes an aerial photograph of this highway, unrolled heavily through the pleasant countryside. This will draw some apprehension for the future of this very old, very English area. Much of it should certainly be preserved; in architecture, knowledge must precede battles for preservation, and this book provides knowledge in abundance.—W.M.C.Q.

THE ARCHITECTURE OF H. H. RICHARDSON AND HIS TIMES. By Henry-Russell Hitchcock. Published by The Shoe String Press, Inc., 965 Dixwell Ave., Hamden, Conn. 343 pp. 6 1/2" x 9 3/4". Illus. \$10.

A reprint of the 1936 edition by the well-known historian, with new illustrations.

continued on page 196

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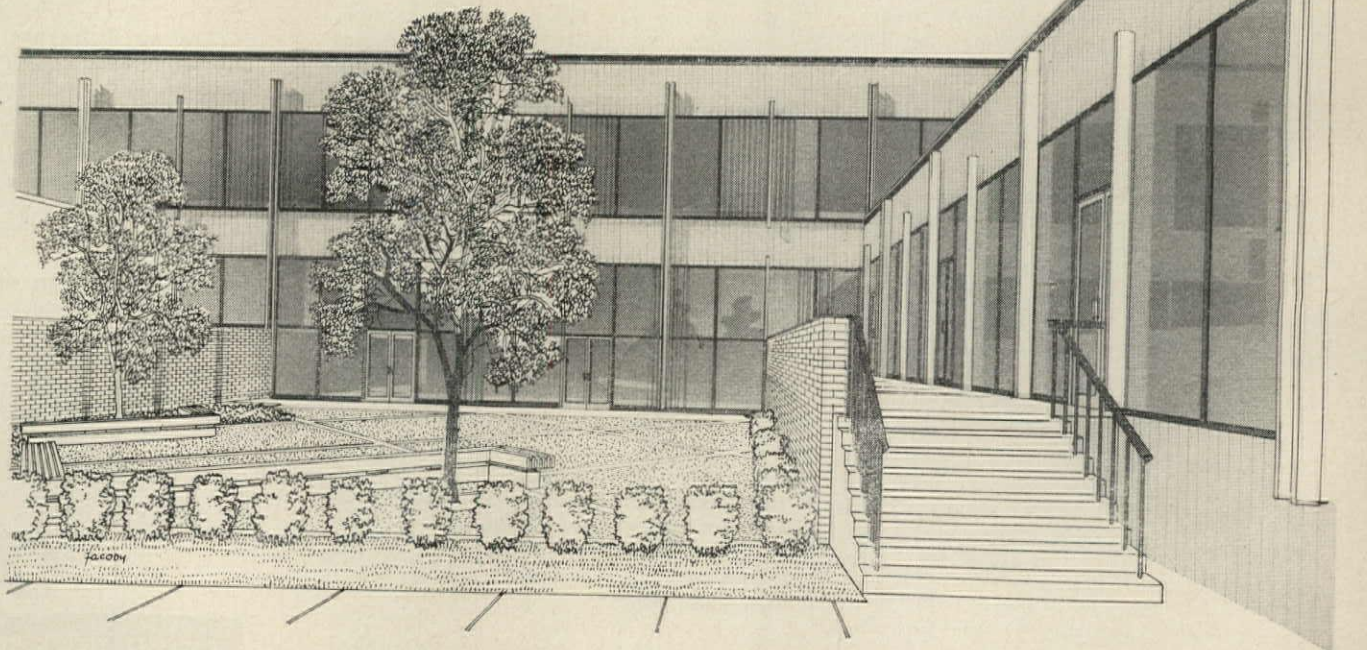
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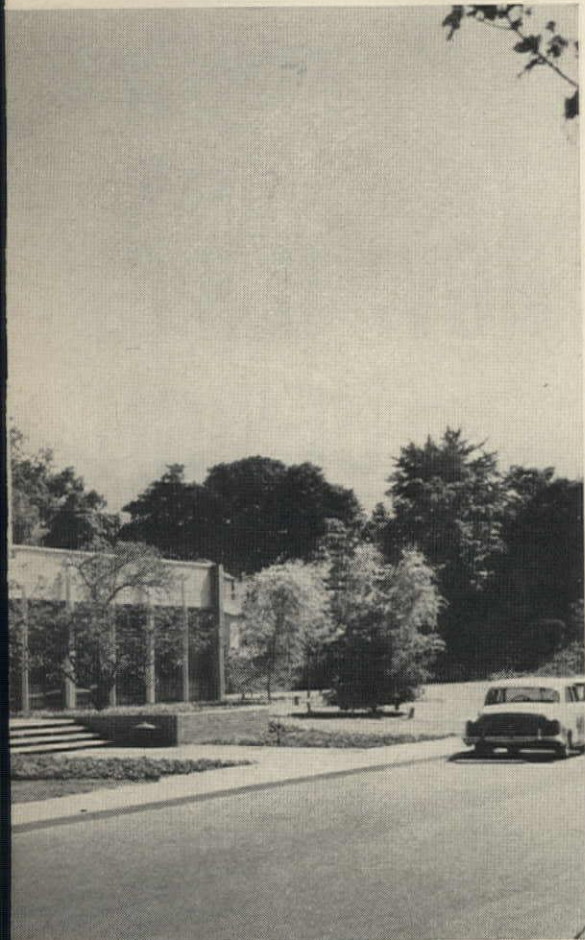


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This sketch shows how big, wide-open glass areas achieve architectural harmony, and afford added pleasure for those who view the beauty of the courtyard from the inside.





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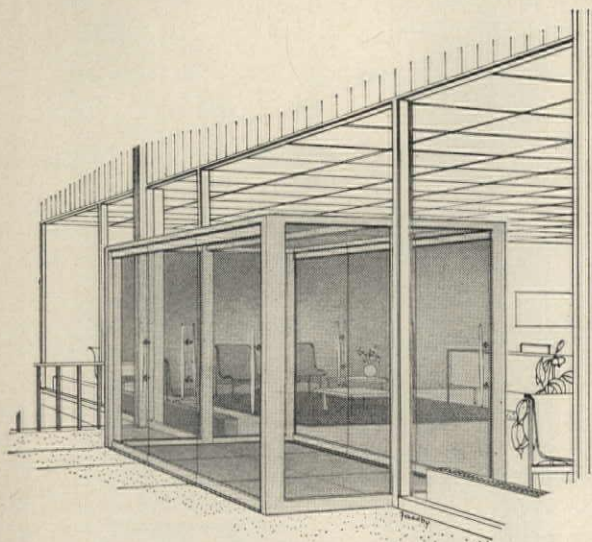
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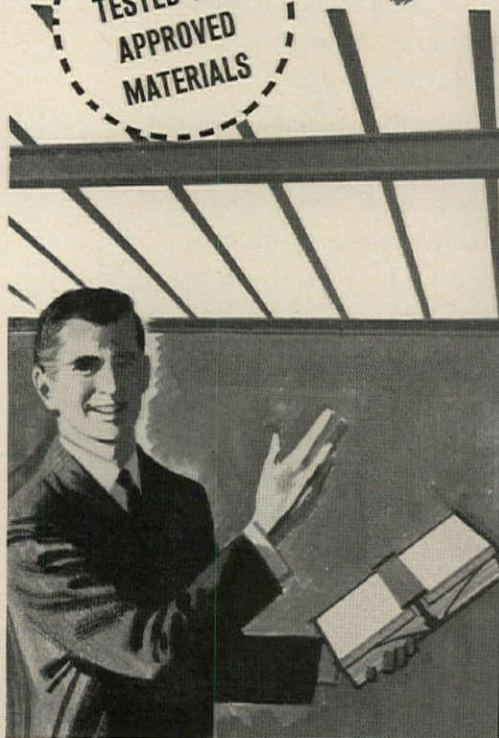
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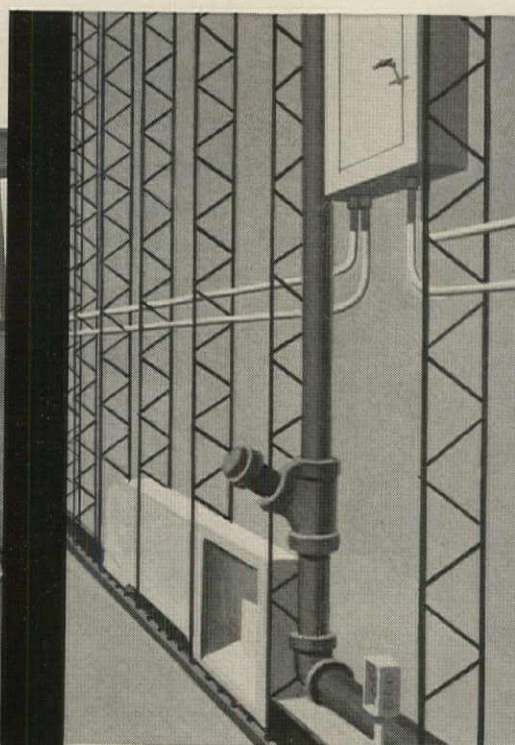
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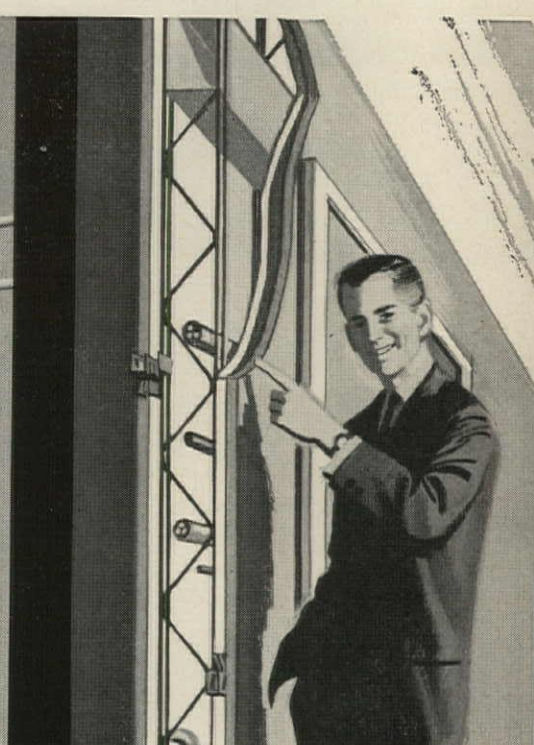
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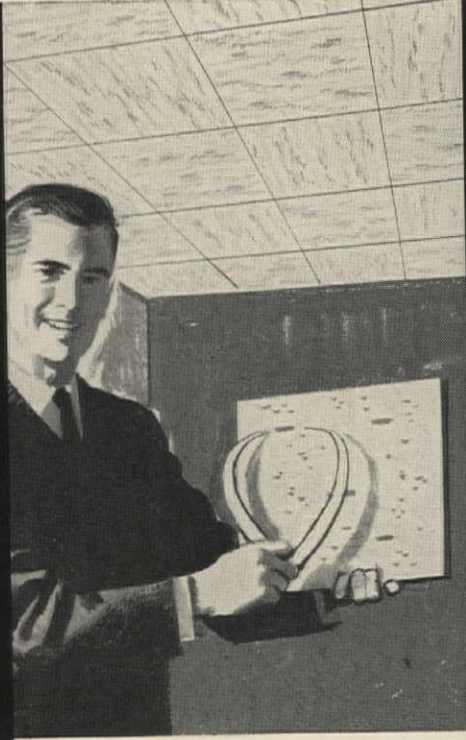
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on the site, pointing out that it is adjacent to Gold Coast luxury apartments, and still not too far from downtown Chicago.

► Just to the north and east of the North-La Salle project (and, for that matter, on North La Salle Street itself) is some of the city's most vigorous rehabilitation. In the Lincoln Park Conservation Area, for which the city is now drawing up a rehabilitation plan, there seems to be a rage to rebuild, and rentals and house prices have skyrocketed. Center of this activity is Oldtown, Chicago's

Greenwich Village and site of the Second City Playhouse (page 88B).

Reorganization and social planning

Besides this shift in geographic focus, the city has reorganized its development agencies to carry out its program more efficiently. Code enforcement in slum areas has been coordinated into a special division for urban renewal within the Building Department, and the renewal agencies themselves, once split into clearance and conservation depart-

ments, have just been centralized under Commissioner Duba's direction. The city is also preparing a community renewal program, under the direction of Consultant F. T. Aschman, former city planning director, which will serve as the basis for the over-all strategy of slum treatment programming throughout the city.

Most importantly, perhaps, there will be a new emphasis on "social planning" for treatment of slum areas. This means that the renewal board, working closely with the City Planning Commission, will attempt to coordinate all the efforts of social agencies (and the school board) in every redevelopment area so that urban renewal can become something more than physical face lifting. Woodlawn will be the city's first true effort to mold better environments, and there the city has already found out that social planning can be even tougher than physical planning (page 122).

Woodlawn poses a question that is likely to arise in other city areas: What happens to a slum which has no institutions around which to rally and in which builders are not very interested?

The city is hopeful that community groups can be developed in some of these areas to provide a rallying point for redevelopment techniques. There are some 30 such formal community groups operating through the Community Conservation Board (now part of the new centralized redevelopment agency) to carry out a variety of programs. Five of these, covering about 2,500 acres, have already had funds allocated. These local organizations not only make it easier for the city to weigh the neighborhoods' own opinions about redevelopment and its scope, but also prompt a more effective execution of any established program.

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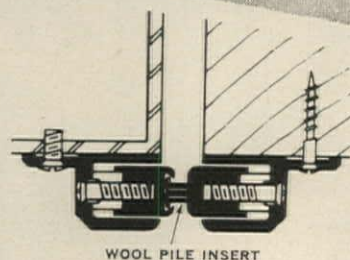
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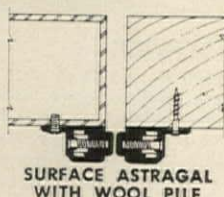
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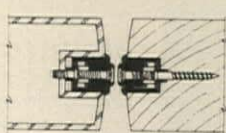
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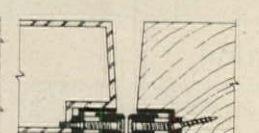
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No. 2

concrete slab design

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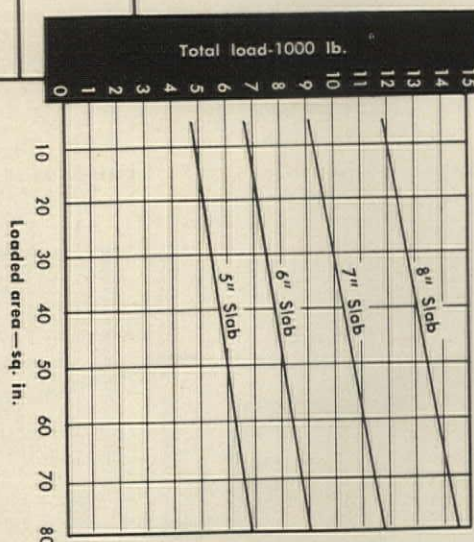
Clip along dotted line

Concrete slab design for long-service floors. Example: assume that a slab is to be designed of 5,000 psi concrete for an industrial plant floor. There will be considerable traffic with trucks having loads of 10,000 lb. per wheel. Each wheel has a contact area of about 30 sq. in. Assume that operating conditions are such that impact will be equivalent to about 25 per cent of the load. The equivalent static load will then be 12,500 lb. An approximate formula for the allowable flexural tensile

stress of concrete is $4.6 \sqrt{f'_c}$ (in which f'_c = 28-day cylinder strength). For 5,000 psi concrete, the allowable strength is then:

$$4.6 \sqrt{5,000} = 325 \text{ psi.}$$

The allowable loads in chart at right are based on a stress of 300 psi, so the design load must be corrected by $300 \div 325$ which gives 11,500 lb. From chart a load of 11,500 lb. on an area of 30 sq. in. requires a slab about $7\frac{1}{2}$ in. thick.



Maximum Wheel Loads for Industrial Floors

The chart above is based on flexural tensile stress of 300 psi. For other stresses multiply loads by ratio of 300 to stress used. For an allowable tensile stress of 300 psi, compressive strength of about 4,300 psi is generally required.

For additional literature on design of concrete slab floors, or other concrete construction, just send a request on your letterhead. (U.S. and Canada only.)

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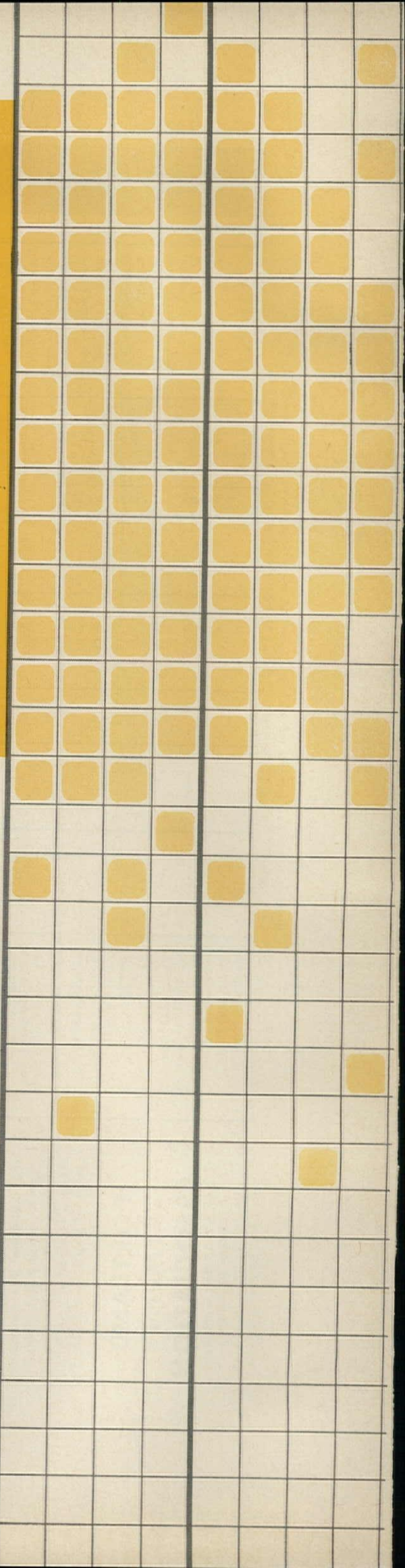
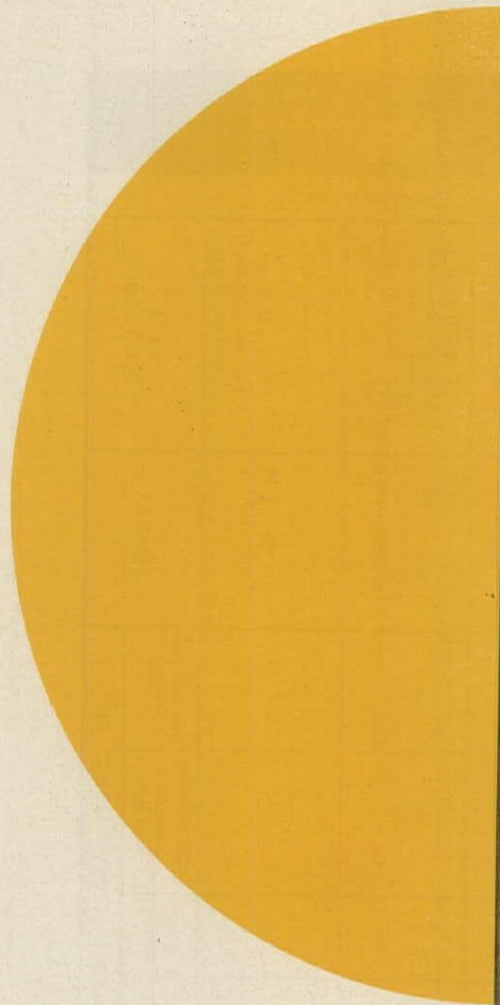
A national organization to improve and extend the uses of concrete

requirements for floors on ground

BUILDING TYPE		TRAFFIC	MIX DESIGN DATA FOR ORDERING CONCRETE					CONCRETE FINISH
			W/C in gal. per bag	28 day cylinder strength (psi)	Slump (in.)	Air content (%)*	Min. cement content in bags per cu. yd.	
SINGLE COURSE	Offices, schools, churches, hospitals, commercial bldgs.; where floor will be covered with tile, linoleum, etc.	Predominantly foot traffic.	5½-6½	3500-4500	2-4	5 ± 1 or 6 ± 1	5½	Steel trowel
	Same as above except concrete is wearing surface. Also for service in light industrial buildings.	Foot traffic and pneumatic tired vehicles.	4-5½	4500-7000	1-3	5 ± 1 or 6 ± 1	6	Hard steel trowel by power and hand equipment.
	Industrial or commercial buildings subject to heavy or abrasive use.	Foot traffic and pneumatic tired vehicles.	4-5½	4500-7000	1-3	5 ± 1 or 6 ± 1	6	Dry shake of extra hard aggregate added to surface immediately before power floating begins.
TWO COURSE HEAVY DUTY	Heavy industry such as foundries, steel mills, heavy manufacturing, also any industrial or commercial building with highly abrasive conditions.	Steel wheeled vehicles. Heavy abrasive use.	BASE COURSE		2-3	5 ± 1 or 6 ± 1	5½	Surface leveled by floating, but textured to insure bond to topping.
			TOPPING**					
				3½-4	8000-12000	Zero	Not required	7½	Special power floats, repeated hand troweling for smooth, dense abrasive resistant surface. Special extra hard aggregates are used.

*For concrete with 1 1/2 in. max. aggregate use 5 ± 1% air content; for 3/4 in. max. aggregate use 6 ± 1%.

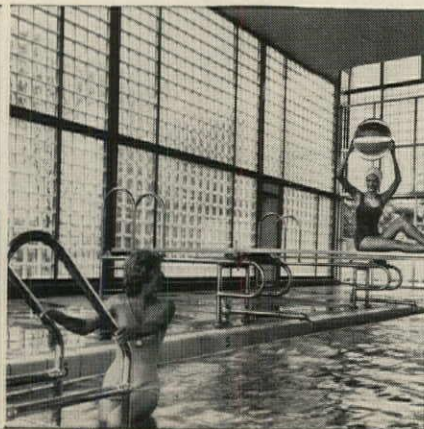
**Topping mix must be mixed in paddle type mixer—generally not available from ready-mix plants.



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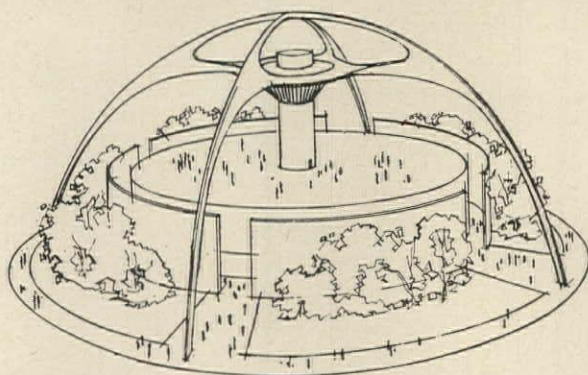
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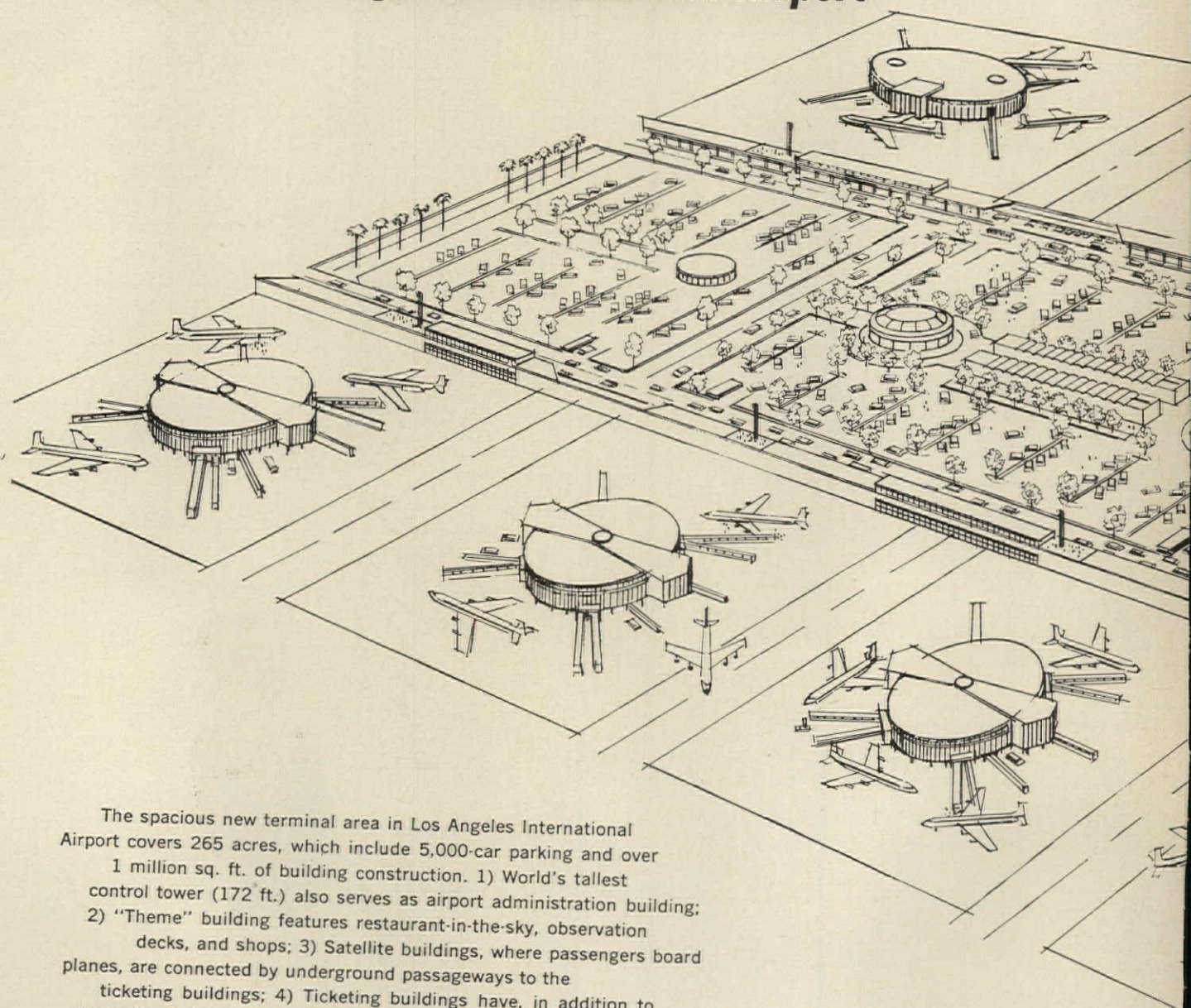


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The spacious new terminal area in Los Angeles International Airport covers 265 acres, which include 5,000-car parking and over 1 million sq. ft. of building construction. 1) World's tallest control tower (172 ft.) also serves as airport administration building; 2) "Theme" building features restaurant-in-the-sky, observation decks, and shops; 3) Satellite buildings, where passengers board planes, are connected by underground passageways to the ticketing buildings; 4) Ticketing buildings have, in addition to streamlined ticket and baggage handling facilities, fine restaurants, shops, and a host of other comforts and services.

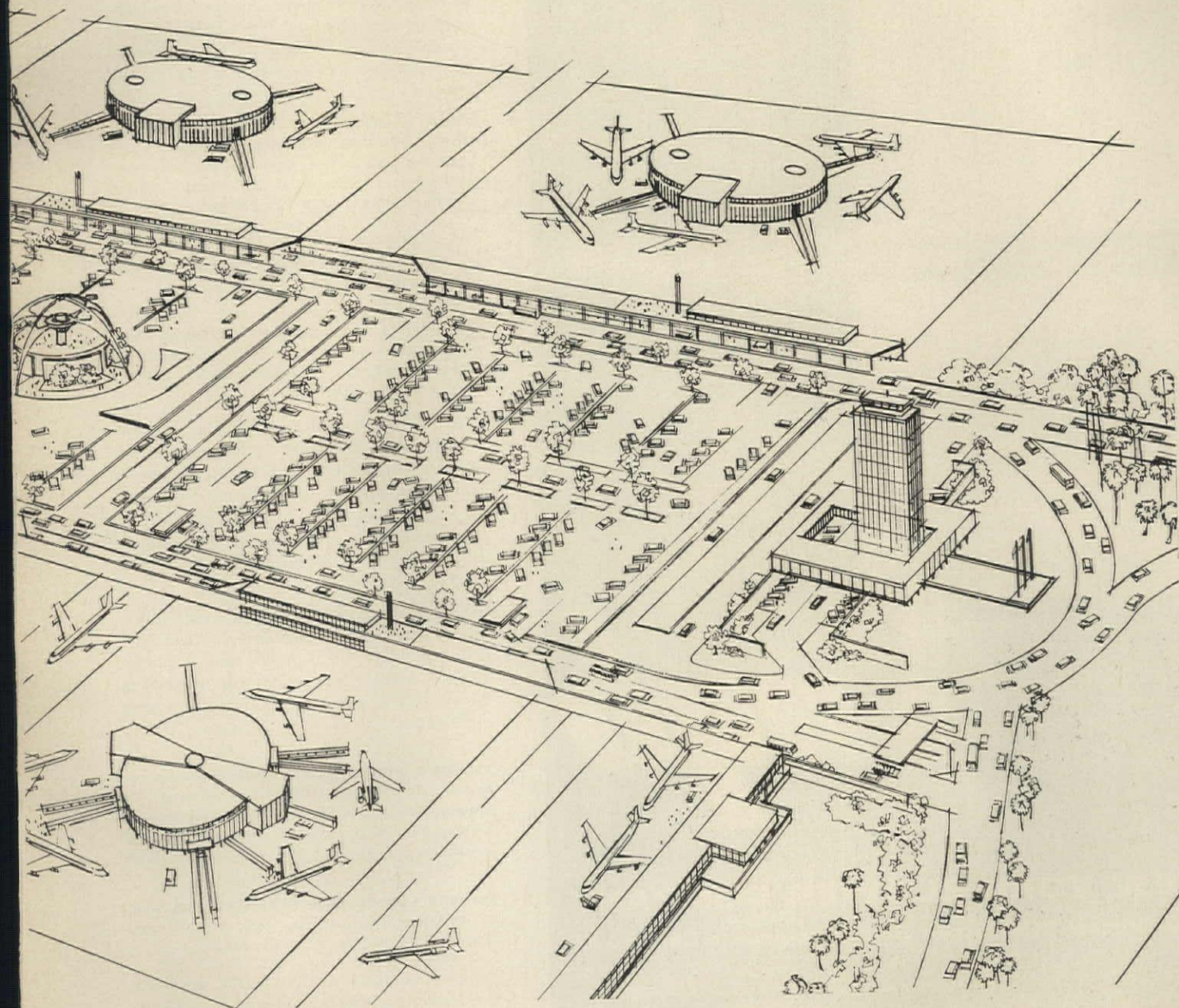
intricate complex of buildings, ramps and passageways was a mammoth undertaking. Outstanding features include: automatic pre-recorded flight announcements, complete with central and local control selectors; local paging systems that operate independently of the airport public address system; background music systems; outdoor speaker trumpets for selective paging; intercom systems; automatic foreign language translations that follow English announcements of overseas flights.

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PERSPECTA 7, The Yale Architectural Journal. Published by students of the School of Art and Architecture of Yale University, New Haven, Conn. 102 pp. 9 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ ". Illus. \$3.

As those acquainted with past issues of *Perspecta* are aware, this student publication is not only a professionally competent, but also a sophisticated, journal. This seventh number is concerned with the

"middle" architects, the leaders among the generation following the great molders of the modern movement. It includes articles, illustrated with their work, by Philip Johnson, the late Eero Saarinen, John Johansen, Paul Rudolph, and a recording of a conversation with Louis Kahn. They discuss the principles that guide their work and their conceptions of the mission of architecture.

It also includes critical discussions by Sibyl Moholy-Nagy, James Gowan, Peter Collins, Colin St. John Wilson, and a summing-up by Walter McQuade. Although each writer expresses a number of certitudes, the general effect is a kind of cry, "We are lost, we don't know where we are, or where we are going!" In part, this may indeed be an accurate reflection of circumstances, but in part it is also owing to the writing, which assays high in pretentiousness. The Johnson, Gowan, and McQuade articles are refreshing exceptions; they have points to make, and they are made with clarity and economy.

PICTORIAL DICTIONARY OF ANCIENT ROME.

By Ernest Nash. Published by Frederick A. Praeger, Inc., 64 University Place, New York 3, N.Y. Vol. 1: 540 pp. 9" x 11 $\frac{1}{2}$ ". Illus. \$37.50.

The first systematic pictorial survey of all extant Roman monuments and buildings, including an extensive bibliography of reference material. A must for the archaeologist, classicist, and interested layman.

THIRD PORTFOLIO OF CATHOLIC INSTITUTIONAL DESIGNS.

Published by Ojibway Press Inc. Available from: Catholic Property Administration, 1 East First St., Duluth 2, Minn. 150 illustrations. 12" x 15". \$18.50.

A handsome study of new ecclesiastical, school, and hospital architecture, documented by text, pictures, and plans.

ARCHITECTS IN AMERICA OF CATHOLIC TRADITION.

By Francis W. Kervick. Published by Charles E. Tuttle Co., Rutland, Vt. 140 pp. 10 $\frac{1}{4}$ " x 10 $\frac{1}{2}$ ". Illus. \$10.

An attempt to demonstrate a Catholic tradition in American architecture by a biographical listing of Catholic architects and photographs of some of their work.

PHOTOGRAPHY 1962 ANNUAL. Published by Ziff-Davis, 1 Park Ave., New York, N.Y. 226 pp. 8 $\frac{3}{4}$ " x 11 $\frac{1}{2}$ ". \$2.95.

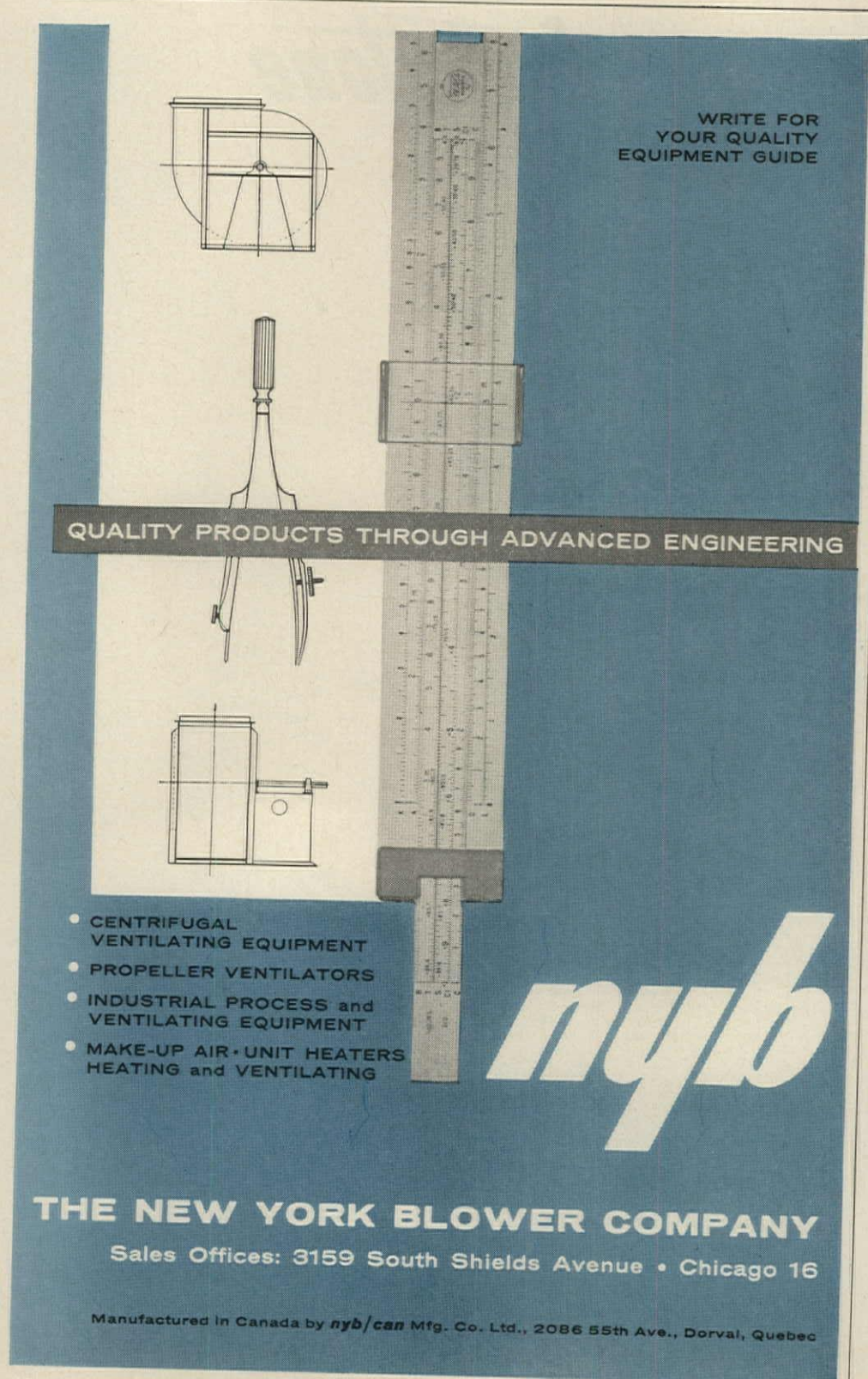
For the first time in his life Ezra Stoller, the fine architectural photographer and AIA Gold Medalist, got himself into a photographic annual. Maybe he was helpless in the matter. At any rate, the publishers were the gainers with six very fine pages.

VIENNA'S HOUSING: a preface to urban renewal. By Morton Bodfish. Published by Indiana University School of Business, Bloomington, Ind. 28 pp. 5 $\frac{3}{4}$ " x 9". Paper bound. 60 cents.

MODERN SCHOOL SHOP PLANNING. Published by Prakken Publications, Inc., Ann Arbor, Mich. 221 pp. 9 $\frac{1}{4}$ " x 11". Illus. \$4.50.

This pamphlet contains plans, specifications, pointers, and examples of new manual training facilities gathered from authoritative sources throughout the U.S.

continued on page 200



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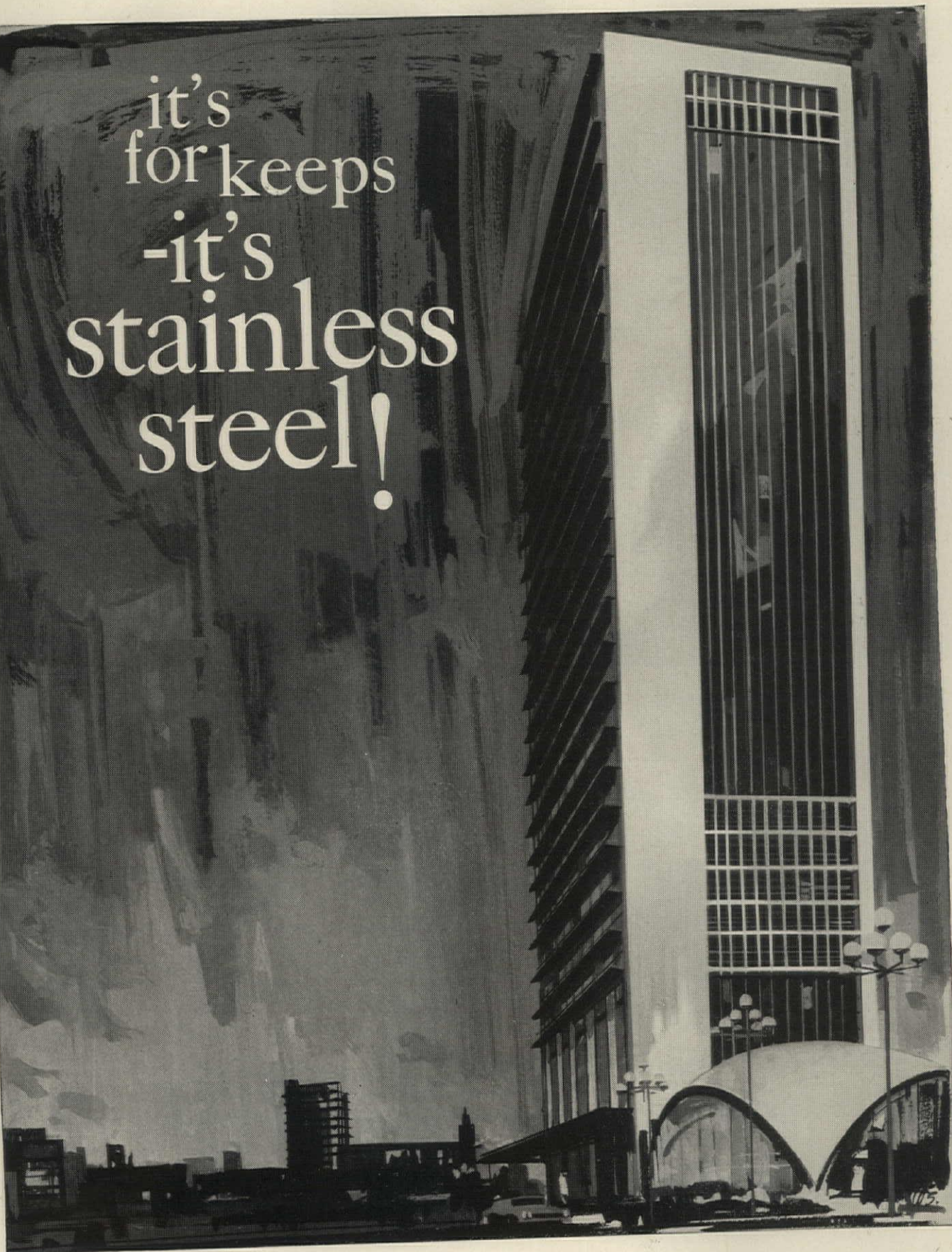
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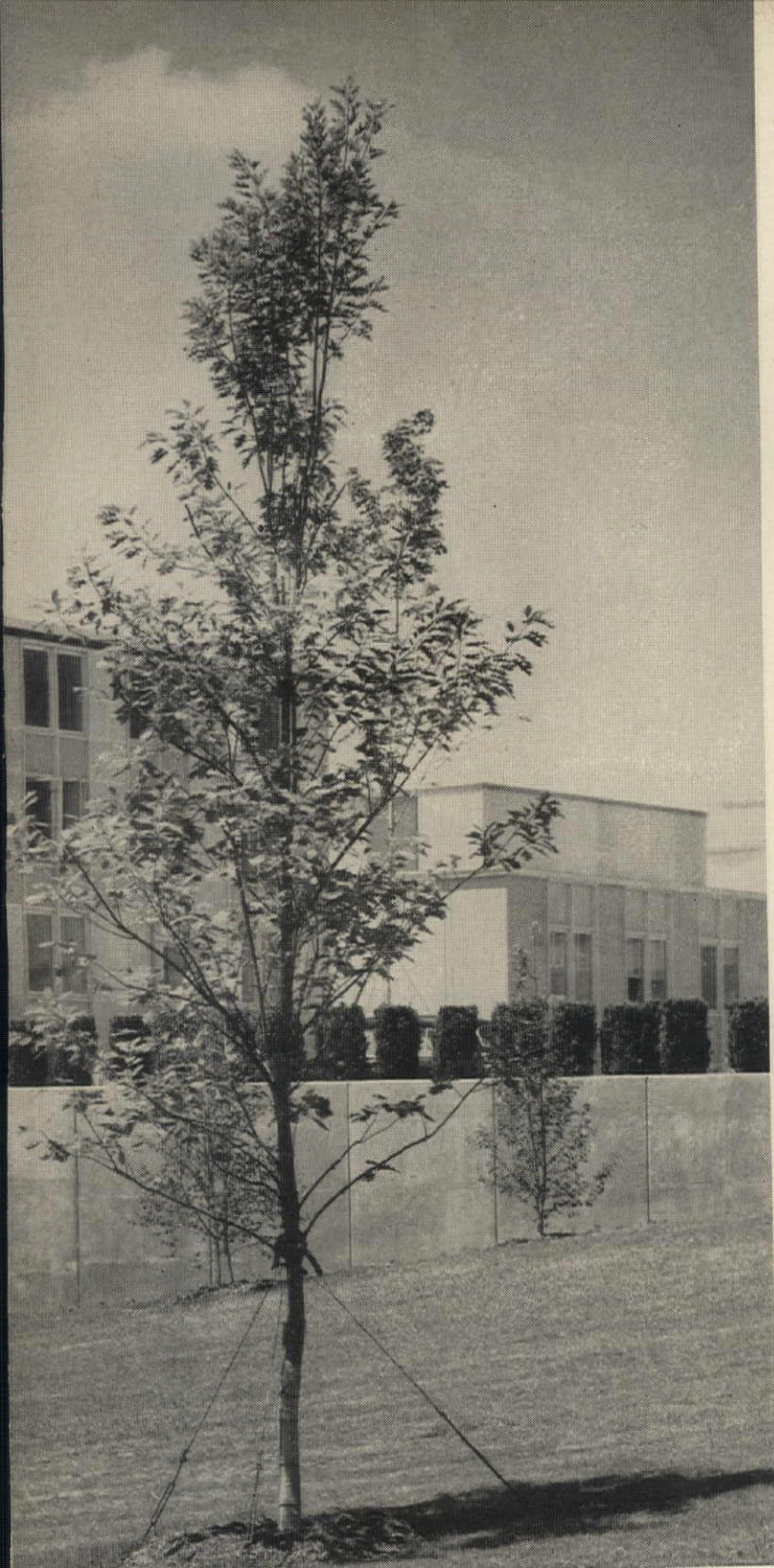


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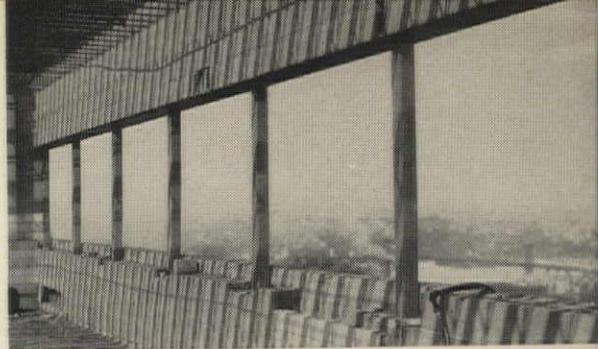
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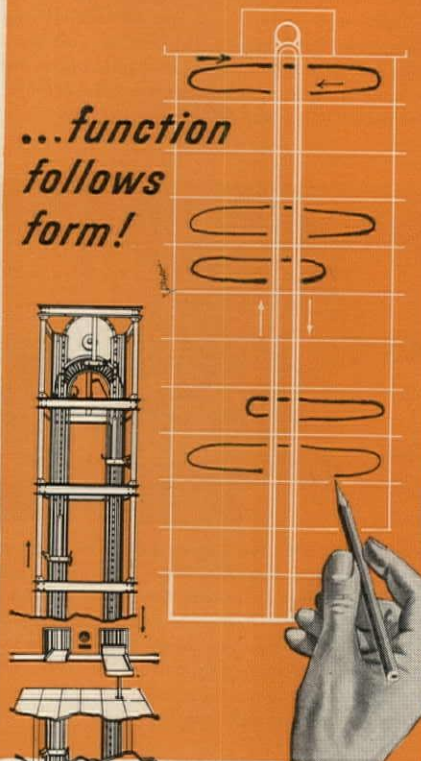
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SURFACE STRUCTURES IN BUILDING. By Fred Angerer. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y. 142 pp. 5 1/2" x 8 1/4". Illus. \$4.50.

All too often, the text which lurks behind a title such as this assumes the reader holds a degree in structural engineering and has a Univac at hand. Here, instead, is a clear, simple text well within the understanding of mere mortals. In fact, one actually has to search to find any numbers or equations at all within the well-written text.

Furthermore, the title only hints at the range of subject matter, for "surface structures" includes vaults of all types, folded plates, hyperbolic paraboloids, Fuller domes, and thin shells. Easy-to-digest lessons in statics are followed up with discussions of the visual and spatial implications of the various systems. This book should (as the publishers suggest) prove especially useful to students of architecture and engineering.

FRAME ANALYSIS. By A. S. Hall and R. W. Woodhead. Published by John Wiley & Sons, Inc., 440 Park Ave. S., New York 16, N.Y. 247 pp. 6" x 9 1/4". \$8.50.

A formula-filled handbook on principles of flexibility and stiffness analysis, including the use of matrix algebra.

TRANSVERSE VIBRATION THEORY. By Demeter G. Fertis and Edward C. Zobel. Published by The Roland Press Company, 15 E. 26th St., New York 10, N. Y. 301 pp. 6 1/2" x 9 1/4". \$10.

Practical means for attacking complex vibration problems in structures.

CONSTRUCTION ESTIMATES FROM TAKE-OFF TO BID. By Norman Foster. Published by F. W. Dodge Corp., 119 West 40 St., New York 18, N.Y. 246 pp. 7 1/4" x 10". \$11.75.

A complete reference that shows the step-by-step procedures that are required for an accurate estimate of a project.

SPECIFYING BUILDING CONSTRUCTION. By D. W. Gale. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y. 217 pp. 8 1/4" x 10 1/2". \$10.95.

An easy-to-read handbook with tables and notes that guides the architect or engineer through the morass of job specification.

PILE FOUNDATIONS. By Robert D. Chellis. Published by McGraw-Hill Book Co., Inc., 330 West 42nd St., New York 36, N.Y. 740 pp. 6 1/2" x 9 1/4". Illus. \$16.

Piles, but not for the proletariat, Reams of information, if needed.

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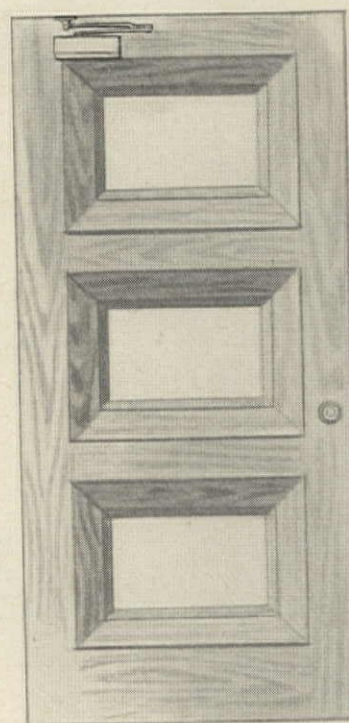
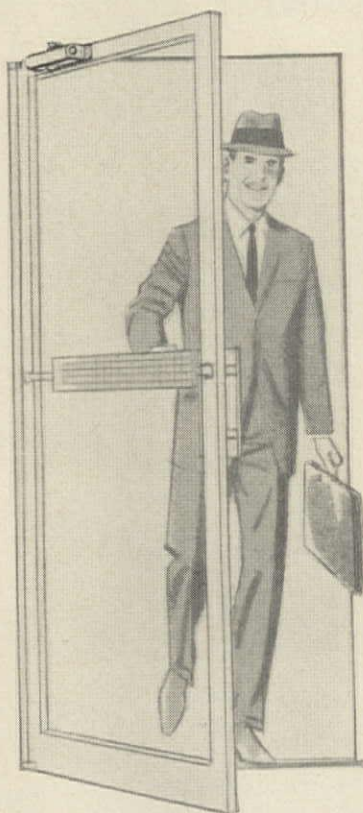
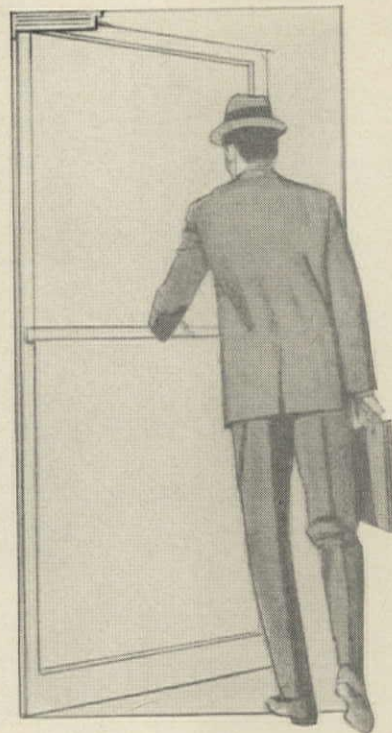
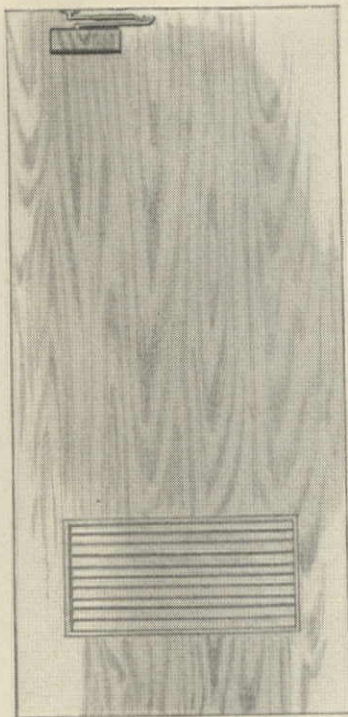
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midwestern insurance center. No less than six new regional headquarters of major companies have been built or are planned for the central area: the United of America (by Shaw, Metz & Associates) which crowns State Street at the river; Hartford Insurance (SOM), and Mutual Trust Life (Perkins & Will) on West Wacker Drive; Equitable (SOM) on air rights at the river just east of the Michigan Avenue bridge; Continental Assurance (C. F. Murphy Associates), with its new annex at Wabash and Jackson Avenues; and the Prudential, by Nacss & Murphy.

Besides the employment these new facilities have provided, it is expected that future commercial developments in the central area will generate an additional 65,000 jobs. But these jobs will largely be for qualified white-collar workers, and Chicago is beset with a surplus of blue-collar industrial workers. And the problems of retraining workers, which the city is already beginning to face, is aggravated by the fact that so many in the work force are poorly educated and as yet unaccustomed to the sort of employment mobility urbanism demands.

The magnitude of this problem cannot be overstressed. Last month, a forecast by the Population Research and Training Center of the University of Chicago sounded "a warning for the future." The report predicted that in the next 20 years, some 1.4 million additional persons will be seeking jobs, and almost half of these will be Negroes. "In the light of this development, the comparatively high rates at which Negroes drop out of school, and the tendency for Negroes not to go on to college, should be combatted with every means at the disposal of the community . . . otherwise, the economy of the entire metropolitan area can literally drown in a sea of unemployment and under-employment."

But if the city is to attract new kinds of industry, it must not only have a first-rate labor force; it must also build the sort of environment that industry de-

mands. This means, among other things, creating the sort of urban environment where creative minds will feel comfortable. Chicago will need an expansion not only of office and residential space, but it will also have to upgrade and expand its cultural base, including educational facilities. A beginning has been made in this direction, with I.I.T.'s recent announcement of a \$50 million research center at its South Side campus. But the very location of that facility raises the question of whether the city and the institute will be able to provide the sort of environment on the South Side which will attract the talent so badly needed there. At least, an effort is being made, and first results are encouraging.

A new transportation pattern

If the future city job market depends to a large extent on downtown's ability to survive, then downtown's survival is just as surely related to a more efficient system of getting into, out of, and around the central city. Chicago, with its Congress Street Expressway, has pioneered the consolidation of highways with mass transit. The Northwest Expressway, and the Southwest Expressway, in the planning stage, will also be built this way.

So far, however, there is no mass transit running up the center of the Northwest expressway. The Chicago Northwestern Railroad is battling to prevent the municipal rapid transit line from competing with its suburban service to the O'Hare Field area. And Congress Street itself presents a weird anomaly: although the rapid transit carries as many passengers at peak hours of use as the six-lane highways flanking it, it is still only one-third utilized. Moreover, Congress Street's vehicular arteries are already jammed to capacity at rush hours.

Chicago has been the subject of the most searching transportation analysis ever attempted, by the Chicago Area Transportation Study. Its work points to a sprawling region of over 9 million persons by 1980 (see chart, page 118), with traffic density three times present levels. But the \$1

continued on page 206

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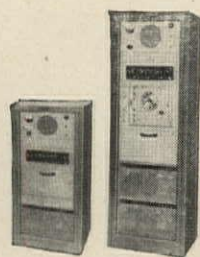
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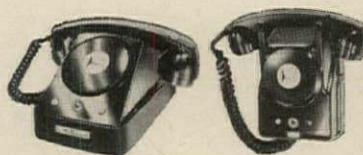
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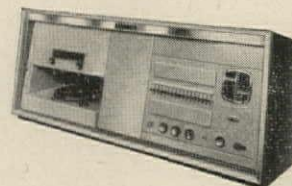
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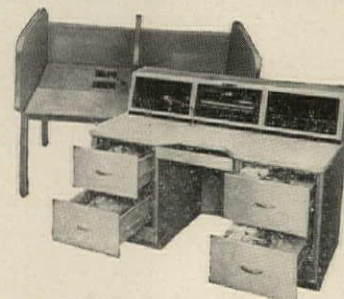
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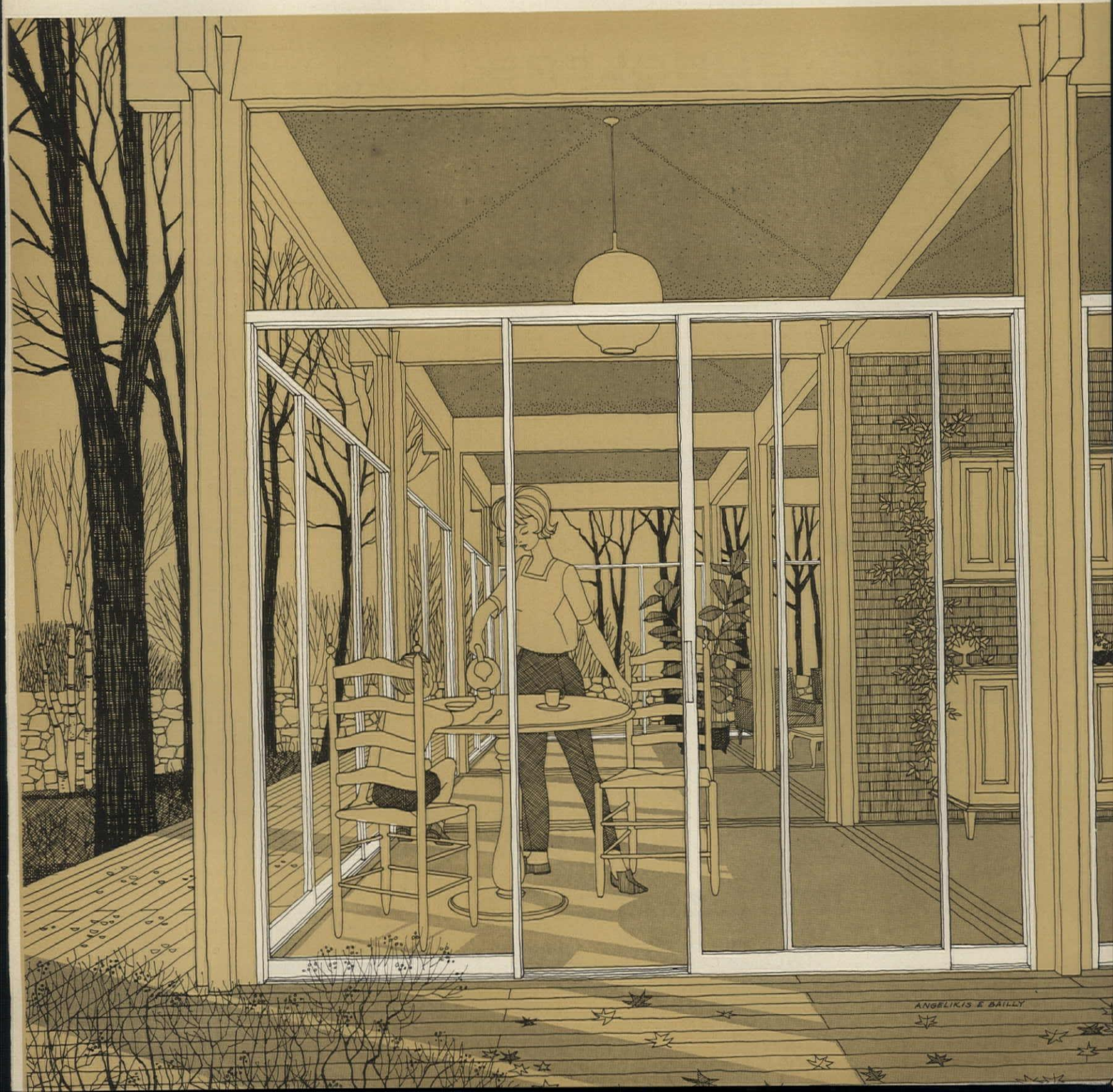
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billion expressway program which is currently under way probably will not be sufficient to handle this sort of density, and the implications of the study indicate a massive new array of superhighways, perhaps superimposed on a huge grid over Chicago's classic internal grid system.

Although any projection of current traffic densities, desire lines, and other factors may indicate a need for intensive expressway development, the city is not buying it. Mayor Daley and his planners, headed by Bach,

realize that this could mean the death of the city, and that ways must be found to utilize rapid transit so as to maximize the efficiency of urban transportation. Thus, the final report of the CAT study has been kept under wraps with its recommendations for a monster interurban network of expressways (which largely ignores rapid transit), until other studies of mass-transit potential can be finished. Still, CAT's director J. Douglas Carroll feels that any effort to enlarge mass transit outside the willingness of passengers

presently to ride it is futile: "There is a propensity to have more cars with rising wealth. Can we assume that will change?" Carroll feels that growth will mean an increasing delegation of functions to the suburbs (e.g. more shopping centers, and more industrial parks like the huge Elk Grove complex or Oakbrook) "with an urban core that will be highly specialized."

A complex political apparatus

The problems of a specialized urban core and surrounding scatteration must be considered together in any comprehensive planning approach by city, county, and state governments. But there is really only one body, the Northeastern Illinois Metropolitan Planning Commission, which is currently planning for the region, and it has the skimpiest sort of advisory status. NIMPC director Paul Oppermann is thoroughly aware of the basic difficulty of planning for a vast region with over 1,000 governmental units and a bewildering array of conflicting interests. Citing the fact that Cook County alone has "110 incorporated municipalities nearly all of which vote Republican," Oppermann declares that "the complexity of the political apparatus is in many respects the key to understanding this city—and this region."

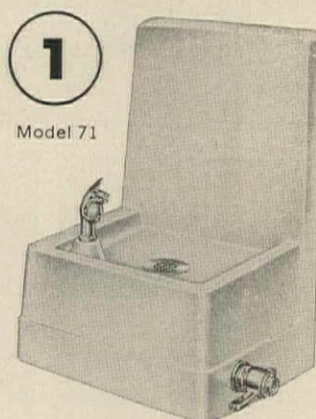
It is obvious that unless this complexity is at least reduced to the point of gaining regional consensus on key factors such as transportation, the city of Chicago can hardly do much more than build a few new buildings and then hang on for another generation. As Harold Mayer, professor of geography at the University of Chicago and long-time city planning consultant, says, "the whole region needs a balanced program of treatment. This means it needs a lot more attention from the state and federal government, and a greater awareness that the real competition is not so much between Chicago and its suburbs as it is between the Chicago region and the rest of the nation."

Mayer believes Chicago can hold its own in this nationwide competition, and that developments like the Saint Lawrence Seaway, which is gradually making Chicago a world port, will be of inestimable help. Like other planners and close observers of the scene, he believes Chicago's strength will grow as it adapts to a changing environment with its characteristic vigor, and that its ultimate future is directly dependent upon its ability to maintain some degree of flexibility. As Planner Bach says, "metropolitan centers, as they expand, will need a center of economic, intellectual, and cultural activities, to give coherence, order, and direction to the entire urban complex. In developing our general plan, we have taken the stand that Chicago will continue to serve these functions." So the optimism is there, anyway.

DAVID B. CARLSON

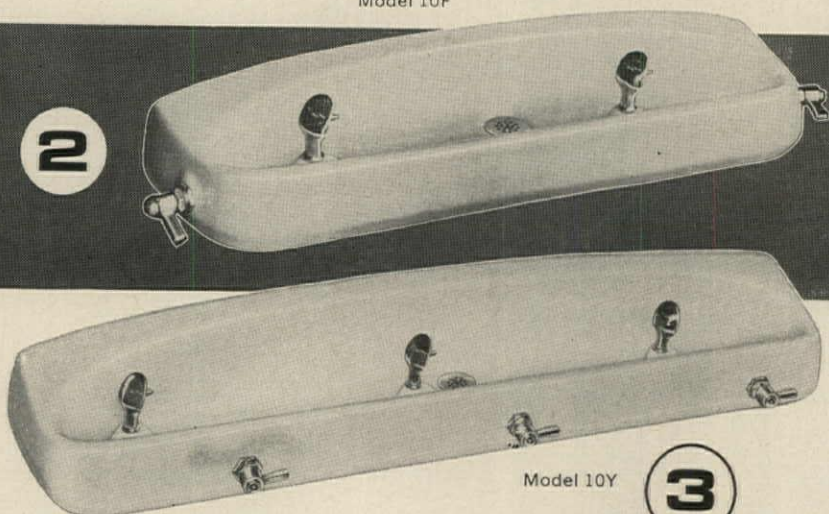
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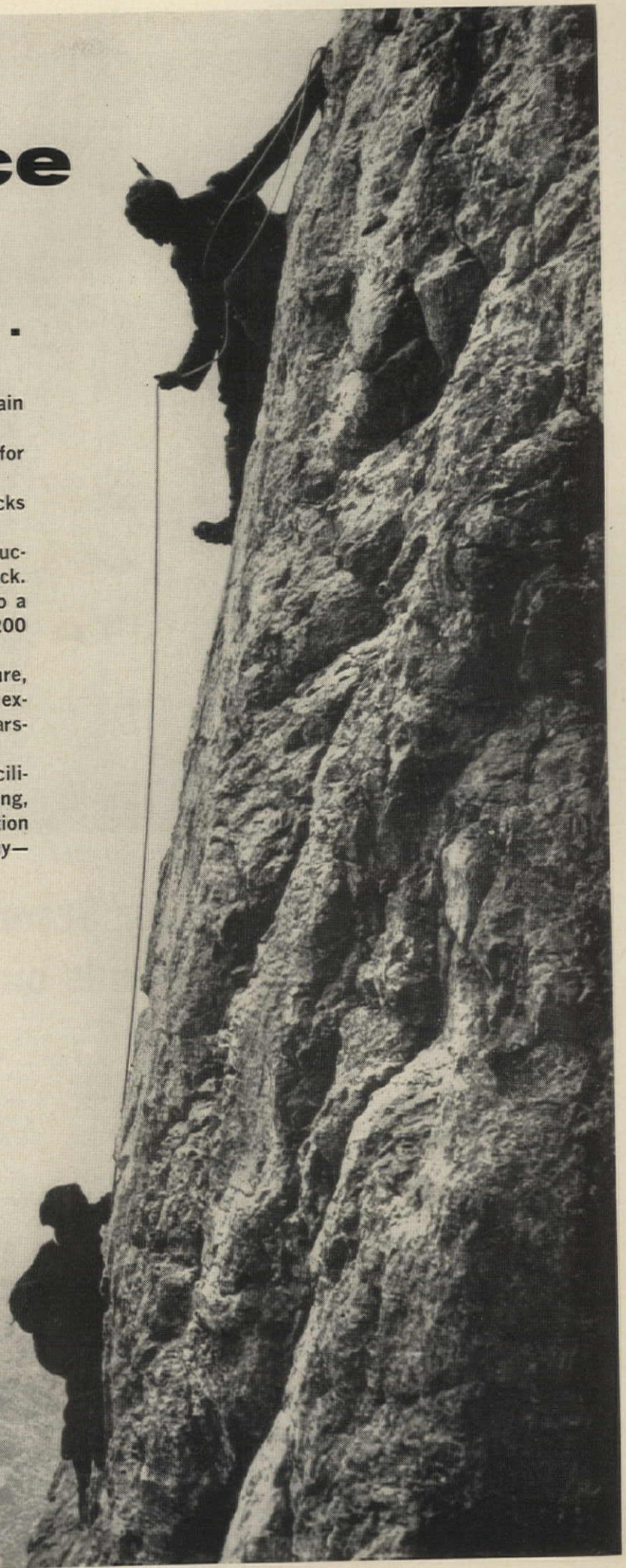
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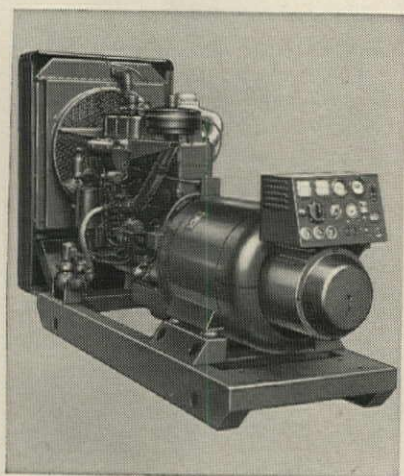
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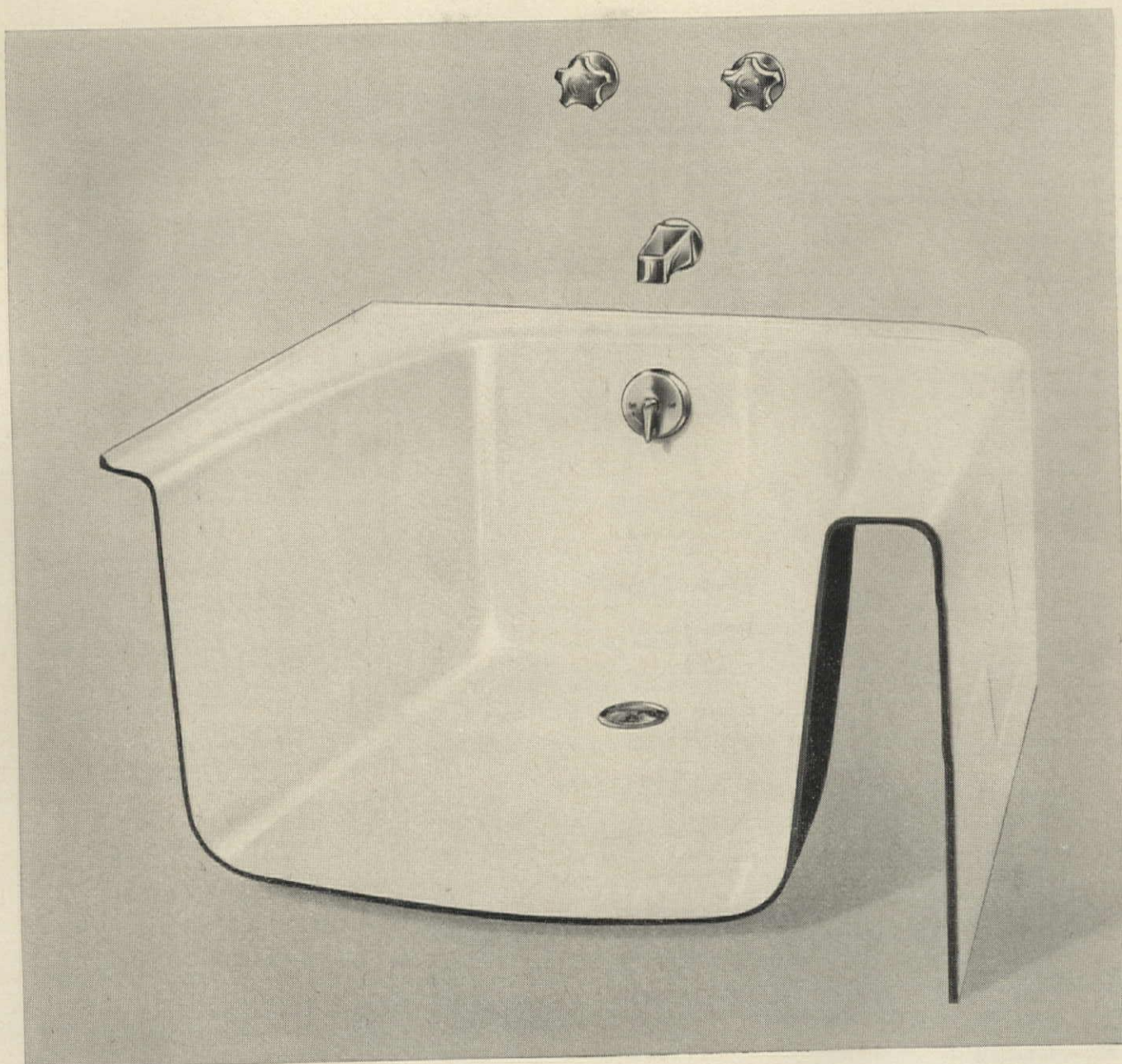
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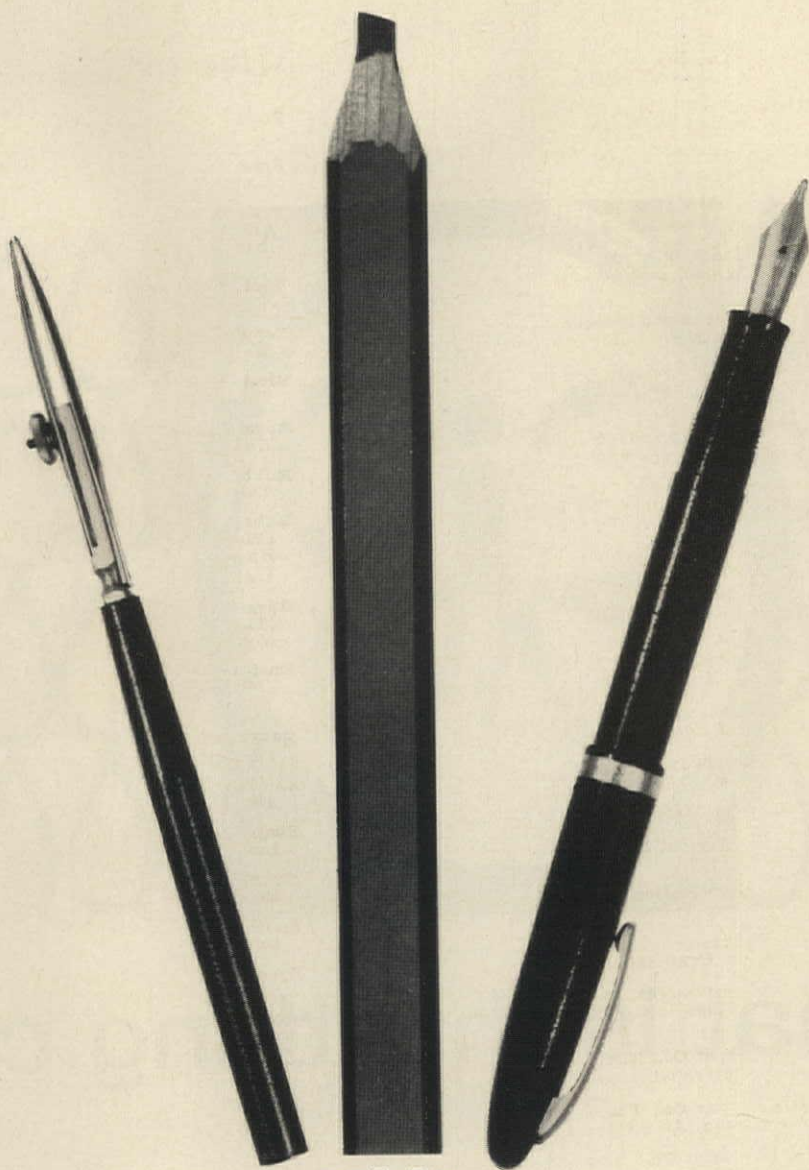
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American Cyanamid Co. (Building Products Div.) (Skydomes)... 46 The Bresnick Co., Inc.	Haws Drinking Faucet Co. 206 Pacific Advertising Staff	Pruden Products Co. 58 Ralph Timmons Incorporated
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Baird & Warner, Inc. 36 Johnson & Johnson Advertising	Kawneer Co., The 66 Fuller & Smith & Ross, Inc.	Rust-Oleum Corp. 77 O'Grady-Andersen-Gray, Inc.
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Bell & Gossett Company 41 Donald L. Paus Advertising	Koppers Co., Inc. 149, 150, 151, 152, 153, 154 Batten, Barton, Durstine & Osborn, Inc.	Simpson Timber Co. 64, 65 Lennen & Newell, Inc.
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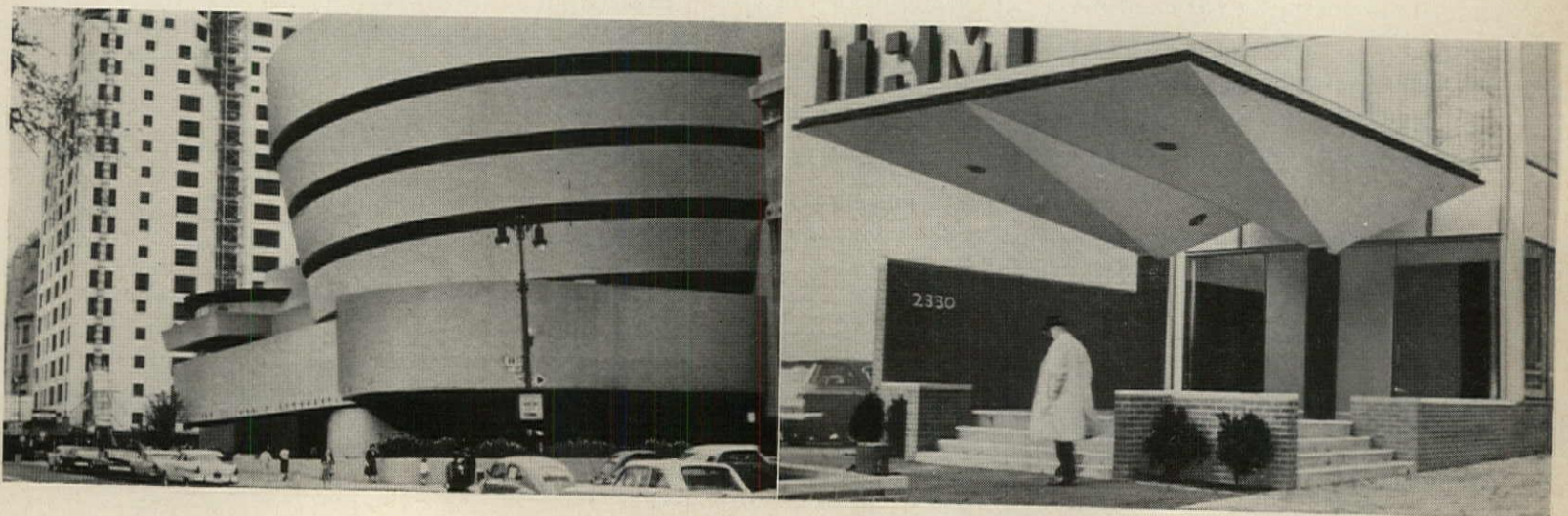
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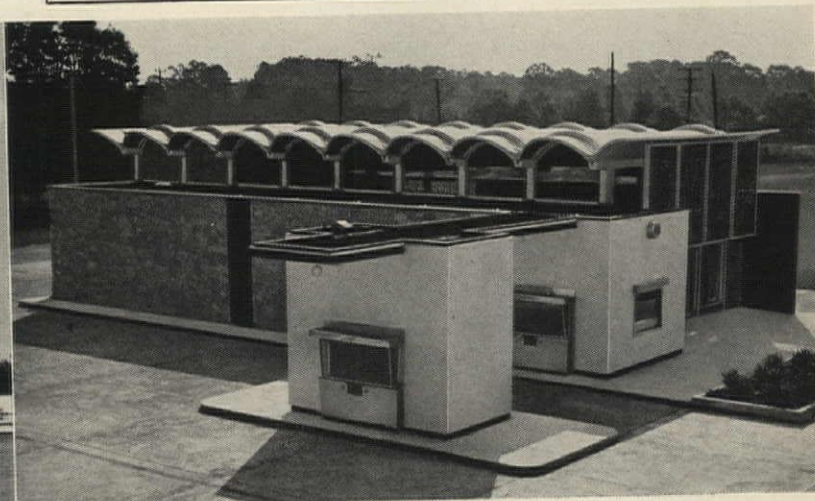
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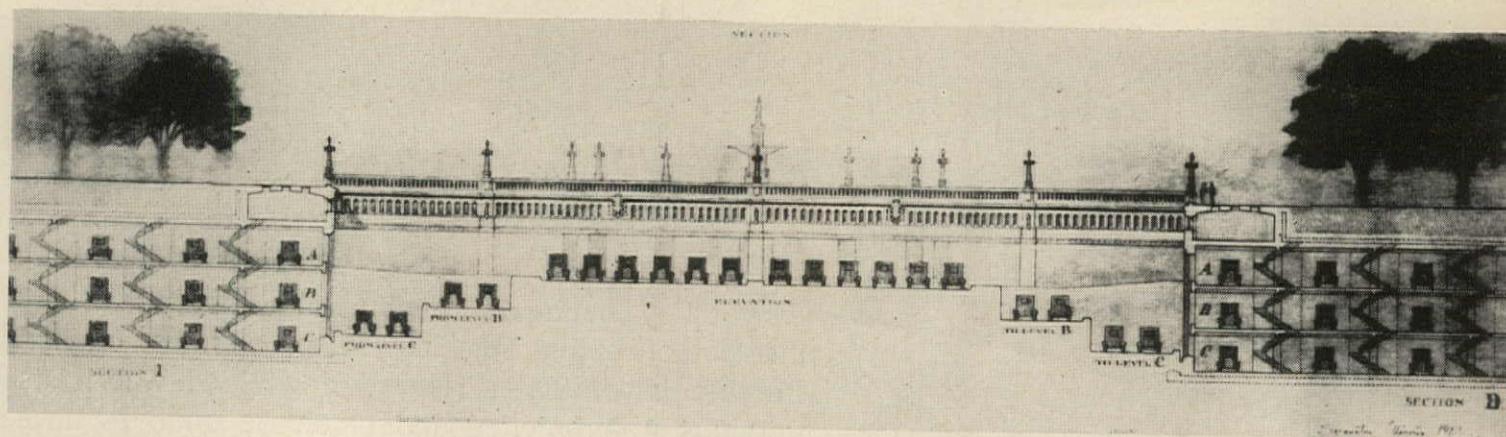
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CHICAGO INTERLUDE

One of the less well-remembered Chicago episodes concerns Samuel Insull, Architect Eliel Saarinen, and the Grant Park that they proposed. Except for a slight intervention called the Depression of 1929, it might have speeded what we now call "private-enterprise urban renewal" by 25 or 30 years.

Colonel McCormick, inexplicably international for a moment, made his famous *Chicago Tribune* competition of 1921 worldwide. It was won in 1922 by the Americans John Mead Howells and Raymond Hood. The "great Gothic spider" that they submitted has stood there all these years.

But among the many eye-opening European submissions one came from Finland, from a certain Eliel Saarinen, previously unknown in the U.S. The jurors placed it high—second, in fact—yet this gave them no refuge from Louis Sullivan's holy wrath. In a masterpiece of righteous invective Sullivan gave them unvarnished, double-spiculated hell. How could they have missed that Saarinen the Finlander had come in, by any standard, first?

And first Saarinen came, in the U.S. skyscraper architecture of the next score of years. Curiously it was the Sullivanian skyscraper type that he and his many imitators knocked off. Whether in Chicago or New York, Saarinen's fountain-like towers, set back, uncorniced, topless, were the rage.

Sam Insull got him to Chicago right off. Insull had longheaded ideas about the vast lake-front area above the Illinois Central tracks (see page 117). And for his new tycoon patron, Saarinen—who was urbanist as well as architect—went to work with a will.

The Grant Plaza which he dreamed up was huge enough to please any Burnhamite and to kill off any walker (drawing, right).

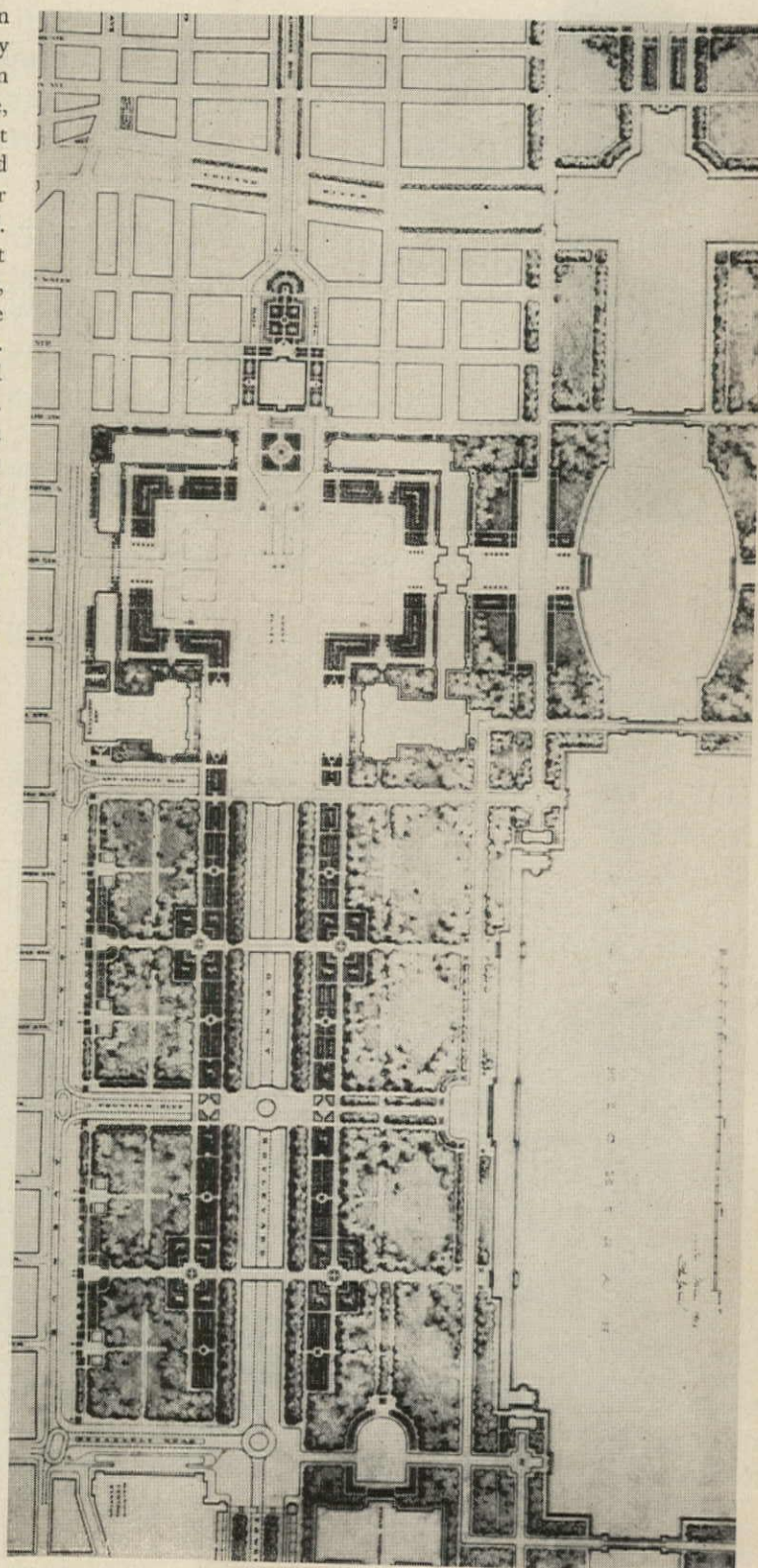
The great square with its axis on Madison Street was to be 800 by 1,600 feet, and a widened section of the proposed Grant Avenue, 500 by 1,100 feet, was to be just its vestibule. At the northern head was "the colossus," a 75-floor tower hotel for Insull himself. Cultural buildings such as the Art Institute were to be roundabout, and the Central Station of the railroad on another plaza behind.

Yet not all this was the equal of Saarinen's planning in depth. With an intricate transportation system, mainly sunk into parks and plazas or subterranean, he combined a vast three-story "automobile terminal" underground. This was the first grand attempt to park really adequate numbers of cars in the center of town and out of sight (as in Dallas' new "Main Place" scheme—see "Projects," page 42.) As for the plan aboveground, it cannily preserved the special areas established by Burnham himself, and also tried something else that U.S. cities have never had—a uniform cornice line to control building height.

Architecture was ready but reality law was not. Insull struggled in vain to get two crucial laws passed, one which would have allowed the disposal of realty rights by strata, i.e. "air rights," and another which would have overcome the veto power given by Chicago to any owner west of Michigan Boulevard over new developments on the side toward the lake. Before all this could be achieved the depression was on, and the scheme was dead.

Moral: In real estate what is tried in Chicago today without avail may work ten years from now, and it might be a little tighter and more practical.

Douglas Haskell



COURTESY, DEPT. OF CITY PLANNING, CHICAGO